

FEBRUARY 1960 • 40 CENTS

Consumer

BULLETIN

The Original Consumer Information Magazine

Testing and Reporting on Products since 1928



TESTS OF

FOREIGN CARS

Reports and ratings of 7 makes
selling at less than \$2400

Fiat 600

Morris Minor 1000

Volkswagen

Hillman Minx

Simca Aronde

Volvo

Triumph TR-10



OTHER TEST REPORTS

Table-model and clock radios

Single-lens reflex cameras—II

Telephoto lenses
for 35 mm. single-lens reflex cameras

Softening water
for use in the home

Dangerous food ingredient
banned

Valiant V-200 compact car

Another life-threatening electric immersion heater

EVERY now and then as Consumers' Research engineers browse through the popular home- and hobby-shop type of magazines, they find an advertisement on a "new" version of a kind of product that has been discussed some years before, and that should have been taken off the market long ago.

Such a product is the *Zipp* instant water heater, which it was claimed "Heats instantly anything from a cup of water to a washtub full." The *Zipp* was also claimed to be made of unbreakable, *shock proof* "Nyalite." It was the term *shock proof* that caught our attention, for experience has shown us that most immersion heaters selling for as little as the \$3.95 price of the *Zipp* are real invitations to disaster, especially in the hands of children and of those adults who are inexperienced where electrical hazards are concerned.

A short test of the *Zipp* showed it to be no exception to the general rule regarding its type of device. It was as dangerous in use as the *Lux* immersion heater unfavorably listed in our report in the October 1957 BULLETIN.

The outer case of the *Zipp* is made of a nylon-like plastic which in itself is a non-conductor of electricity and therefore does not contribute in any way to shock hazard, but as shown in Figure 1, the 1200-watt heating element of the *Zipp* is exposed and would be in direct contact with water being heated. In the test by Consumers'

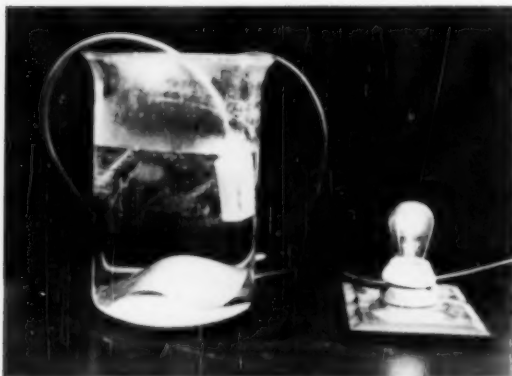


Figure 2—Current flowing from the exposed element in the *Zipp* heater through the water to the metal plate in the bottom of the beaker lights the lamp bulb, which is connected to the metal plate in the beaker by one wire and to a cold-water-pipe ground by another.



Figure 1—The bare heating element of the *Zipp* heater is clearly seen through the slots in the "Nyalite" casing.

Research, enough current flowed *through the water* when the heater was operated to light rather brightly a 10-watt lamp (see Figure 2). This current was about 30 times the amount of leakage that Consumers' Research considers excessive.

The instructions that accompanied the *Zipp* included a warning called "Rule 1" that cautioned the user not to put hands in the water while the heater is plugged in. This warning was then qualified by "Rule 2" which said that if you must violate "Rule 1," then at least don't at the same time touch a ground such as a metal faucet or steel sink. Evidently the manufacturer of the *Zipp* is unaware of the good electrical conductivity that sometimes exists through a pair of shoes to a tile or cement floor.

The instructions mention using a metal teapot or pan as the vessel for containing the water while it is heated. Dangerous leakage current will, of course, flow in large amounts from the surfaces of the metal container just as easily as from the water itself.

Readers should remember that making a device of a different material from one which we have previously warned about does not necessarily make the new product safer. With open-element immersion water heaters, it is the basic design, not the materials of construction, whether "Nyalite" or some other plastic, that makes them dangerous. Always look for the Underwriters' Laboratories' symbol *on the product itself, not just on the line cord*, as a minimum guarantee of safety in operation of any electrical device. The *Zipp* has no such approval, and it is a certainty that in its present form it will never merit U.L. approval.

C. Not Recommended

Zipp Instant Heater (Sold by Master Mechanic Mfg. Co., Burlington, Wis.) \$3.95, postpaid. • Open-element immersion heater with the hot-wire heating element in direct contact with the water to be heated, which therefore can carry large amounts of leakage current to a grounded object or person.

The Consumers' Observation Post

THE SINGLE PACKAGE DEAL for home maintenance and repair services has great appeal to homeowners who have a wide variety of mechanized equipment. Another to join the growing list of such organizations previously mentioned is Homsmith, Inc., 420 Waverly St., Palo Alto, California, highly recommended by a subscriber who particularly likes the firm's policy of careful investigation of the service organizations used and of providing 24-hour, 7-days-a-week service. In St. Louis, on the other hand, the American Homeowners' Association and several similar agencies were unable to make a go of it. The Better Business Bureau of St. Louis reported that the Homeowners' Association is defunct and some customers discovered that they were left holding the bag for payments to contractors whose bills, though paid by the homeowner, had not been taken care of by the association. The Better Business Bureau suggests that it is well for homeowners to get a credit rating on any package-deal service before they pay the yearly membership fee.

* * *

FROZEN FOODS MUST BE KEPT AT ZERO DEGREES TEMPERATURE or they will deteriorate in quality. Unfortunately the trucking industry is unable at present to provide the proper equipment needed to assure sustained low temperatures, and one trucking company executive has requested a tolerance of 10 to 15 degrees for at least four years, until the requisite new equipment is available.

* * *

THE WOMAN WHO USES LIPSTICK--and who doesn't?--is in something of a quandary these days. The Food and Drug Administration has proposed a ban on 17 coal-tar colors used in lipstick because they proved harmful when fed in the diet of test animals. The lipstick manufacturers, however, have appealed the ruling and hope to get legislation through Congress to forestall the Food and Drug Administration's order. The F. & D. Admin. admits that the amount of color ingested into the human system from the lipstick is much smaller than the amount used in the animal feeding tests. The cautious woman, however, will be wise to keep her use of lipstick down to a minimum until the situation is clarified. There are apparently no lipsticks available that are completely free from every one of the colors to be proscribed.

* * *

SINCE NYLON CARPET is considered quite durable, wear guarantees of 5 and 10 years have been furnished in some cases by the manufacturers to retailers of their particular rugs. The mills guarantee the carpet against wear on a pro-rata basis, but do not include the cost of underlay and labor. Pilling, buckling, and results of improper cleaning are not covered, according to Home Furnishings Daily. In some areas, retailers feel that these wear guarantees have done more than anything else to make nylon carpet popular.

* * *

THOSE MINIATURE MOTOR CARS OR "KARTS" continue to rise in popularity. It is reported that some of the manufacturers are planning to introduce a number of new entries in the midget field. Yard Man Inc. is building a pint-sized copy of the Chevrolet Corvette. Master Enterprises is planning a small copy of the Mercedes-Benz 300 SL. McDonough Power Equipment, Inc., is selling a Model T line, and Fair-Craft Corp. is putting out a midget car that resembles the Willys Jeep. The National Safety Council, however, has already issued a 4-page warning on the dangers of racing these midget cars by children too young to handle the powered vehicles, which can sometimes do 30 to 50, even 90 miles per hour. Several deaths of children have already occurred in fast driving and racing of miniature motor vehicles.

PENICILLIN AND OTHER ANTIBIOTICS IN MILK are a cause for concern in consumer circles because of the possibility that they may cause an unfavorable reaction in persons already sensitized to antibiotics. The presence of such contamination in milk is due to improper application of an antibiotic in treating dairy herds or in its use as a preservative by direct addition to milk. A medical panel called by the Food and Drug Administration to consider the problem agreed that even in the small amounts present in milk, penicillin is capable of causing allergic reactions in highly sensitive individuals. The Council on Drugs of the American Medical Association suggests that reactions attributable to penicillin-contaminated milk have probably gone unreported or unrecognized, and that measures to eliminate penicillin completely from the milk supply should be undertaken by the U.S. Department of Health, Education, and Welfare.

* * *

CERTAIN COMMONLY USED MEDICINES may impair driving ability. A New York State Legislative Committee has recommended the enactment of laws that would bar from the highway those drivers who use certain stimulant drugs, tranquilizers, antihistamines, anti-infective agents, plain sedatives, and analgesics, on the grounds that habitual users of these drugs are unable to drive safely.

* * *

BUILT-IN APPLIANCES IN THE KITCHEN can now be financed by Federal Housing Administration loans. The FHA recently liberalized its home improvement loan policies for modernizing or repairing current homes, according to Home Furnishings Daily. The new loan policy does not make free-standing appliances eligible, but does permit loans for such items as cabinets, counters, sinks, flooring, electric wiring, and allows for the inclusion of built-in appliances. On new homes, the FHA in some sections will insure new home mortgages permitting a builder to include a range, refrigerator, washer, dryer, space heater, garbage disposal unit, dishwasher, and home freezer as part of the home mortgage package. Local appliance dealers and other retailers are complaining that this policy permits builders to buy and supply appliances at lower prices than the retail stores can afford to quote.

* * *

THOSE TOPPINGS FOR DESSERT widely sold in supermarkets need standards. The Food and Drug Administration has proposed that whipped cream should have at least 30 percent of milk fat by weight with not more than a total of 1/2 of 1 percent of the following emulsifying ingredients added to aid the whipping process: extract of Irish moss, locust bean gum, karaya gum, algin, gelatin, monoglycerides or diglycerides (or both) of fat-forming fatty acids except lauric acid (a soap fatty acid ingredient). This, of course, does not take into consideration the other toppings which resemble whipped cream but contain a number of other ingredients than milk and cream.

* * *

FEDERAL GRADES FOR LAMB AND MUTTON were to be suspended for one year effective Jan. 4, 1960. The optimistic announcement in this column in the December Bulletin that the United States Department of Agriculture had withstood pressure from industry to discontinue federal lamb and mutton grades proved to be premature. Secretary of Agriculture Benson in December announced suspension of present grades on the ground that the industry was unable to come to an agreement on standards. No mention whatever was made of the importance of grading lamb and mutton in order that the consumer might have some assurance that she was not paying for a product of low grade a price that might rightfully have been charged only for a better grade. Fortunately, lamb and mutton are not essential meats on the table of most consumers, and the simplest thing for most consumers to do is to substitute other meats until the grading situation is resolved. As we go to press, the date for suspension has been postponed to Feb. 8, 1960.

(The continuation of this section is on page 37)

Consumer Bulletin

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Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3 at the end of a listing indicates relative price, 1 being low, 3 high. Where the 1, 2, 3 price ratings are given, brands in the 1, or least expensive group, are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

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Simca Aronde Deluxe

FOREIGN CARS

*Small size, and low price, with good economy,
give them special appeal to many*

THERE is every reason to believe that major changes are taking place in the automobile buying habits of the American public. The highly competitive situation existing between automobiles of customary size and the new "compact" domestic cars and the foreign imports can only result in sharp changes, perhaps even a revolutionary alteration, of the market situation.

Naturally, as shifts in consumers' automobile buying habits take place, there will be marked changes in depreciation rates and in the turn-in or secondhand value of the cars affected. These shifts of resale value necessarily introduce a new element of uncertainty into the economics of car buying at the present time.

The imported-car dealers are highly optimistic about their future prospects, and most of them seem to feel that sales of small imports in the under-\$2000 price class will continue to capture at least the substantial 10 percent of the domestic market that small imports had in 1959. If the best of them continue their present policies, which tend to maintain the relatively low depreciation characteristic of several makes (in percentage and in dollars), they will surely continue to appeal to at least a million or two of the 50,000,-000 American automobile users as the cars they now own require replacement.

Anyone considering the purchase of a foreign car or one of the "compact" American cars to take the place of one of the very large and very heavy and very costly domestic automobiles of

the usual size will want to weigh the several inherent advantages and disadvantages of the smaller cars, in terms of his personal driving needs and habits.

Dollar savings

It is obvious that low price is one principal reason why many people buy a small foreign car. Among the 10 best selling makes, which account for about three fourths of the foreign cars in use in the United States, the most popular models of the *Fiat*, the British *Ford*, and *Volkswagen* sell for less than \$1600, the *Hillman*, *Renault*, and *Simca* sell in the \$1700 to \$2000 range; the *Opel* and *Vauxhall* are only slightly higher. All are less expensive than the new "compact" U.S.-made automobiles, *Corvair*, *Falcon*, and *Valiant*. Six of the ten foreign cars that sell in the largest number were tested by Consumers' Research and are reported in this issue, along with a British-made *Morris* and the *Triumph* sedan. A British *Ford Anglia* will also be tested, and reported in a future BULLETIN.

The amount of money you can save by owning and driving a small foreign car rather than a typical car of one of the lower-price brackets made in the U.S. is dependent upon a number of variable factors. With either kind there are certain fixed charges, such as license fees and federal and state taxes; these will normally be less for the foreign import because of its lower initial cost, smaller size, and lighter weight. Insurance costs

are likely to be somewhat less for a small car. On the new U.S.-made compact car, some insurance companies are now offering discounts on the rates applying to collision, property damage, bodily damage, and medical payments.

Out-of-pocket expenses for gasoline and oil are likely to show a substantial saving to all users except low-mileage drivers; roughly the saving may amount to \$10 per 1000 miles driven or \$100 a year for an average car user. Very likely, too, the rate of tread wear of tires will be considerably reduced. (The smaller tires, however, will not necessarily be cheaper, and obtaining a needed size may call for some shopping around when new ones are to be bought.) Relatively low mileage from the tires on U.S. cars is caused principally by two factors—the inherent capability of American cars of recent models to travel at high speeds, and to accelerate at high rates in starting up and in passing other cars, and the use of tires which are undersized for the load they must carry. The small foreign cars do not provide the extra horsepower for “jack-rabbit” starts and are, besides, likely to have tires of adequate load rating.

The one factor which is difficult to assay is depreciation. Except for the very popular *Volkswagen*, which has phenomenally low depreciation, all the makes previously mentioned lose a substantial part of their value each year, but not quite as fast as the low-priced American cars, whether dollars or percentages are used as a basis for calculation. It is worth noting that with a 25 percent yearly depreciation figure, one's loss on a \$3000 domestic product will amount to \$750 in the first year, and loss on a \$1500 import will be only half that amount. Financing charges and monthly payments will be correspondingly lower with the less expensive imported cars.

Finally, even in this short discussion, it must be said that savings with the foreign cars are very likely not to go straight down the line. Especially in the case of major repairs, experience has shown that common kinds of repairs and adjustments on a small imported car can at times cost substantially more than a similar job on one of the “Big Three,” and if your dealer happens to be one who is determined to make money fast, you may have to get along with him, because no other dealer in the given make is near enough to your home to be a practicable source of servicing.

Performance

In the tabulation, on pages 10-11, figures have been included for the accelerations and gasoline consumptions measured on the cars tested. Consumers' Research's figures, as given, are useful if one wishes to compare the performance under test of one car with another. These figures, however,

necessarily give only an approximation to the results you might obtain in your own car of similar make and model. In all automobile tests, for example, Consumers' Research carries the same “passenger load,” 460 pounds (consisting of driver, observer, and test equipment). The fuel tank is filled at the start of the test, and the odometer and speedometer errors determined so that findings can be based on true speeds and true distances traveled. With a heavy 4000- to 5000-pound U.S. car, the “passenger load” amounts to only about 10 percent of the weight to be propelled and variations in this load do not affect the test results greatly. With a relatively light foreign car, such as the *Fiat* or the *Renault*, however, the passenger load may amount to 30 percent or more of the total weight of the car itself, and thus the weight carried as driver, passengers, and luggage is significant when the test results for acceleration or miles per gallon are to be compared to those a particular driver might get with his own imported car. In a light car, also, the effect of an extra passenger or two is likely to be very noticeable on hills and in accelerating to pass a car or truck.

The number of miles that one can drive on one gallon of gasoline in typical use of a car on the road will also vary considerably (usually downward) from the figure Consumers' Research obtains at a steady 50 miles per hour, especially if there are many hills and turns to be negotiated or the car is used principally for around-the-town driving.

In cars which employ power-driven accessories, such as automatic transmissions, power steering, power brakes, or air conditioning, a considerable proportion of the power developed by the engine must be diverted for their operation. Thus, an engine rated at 200 horsepower at 4000 revolutions per minute and driving no accessories might develop only 110 horsepower at an engine speed corresponding to a car speed of 50 miles per hour. When the engine is installed in an automobile, possibly 50 of the 110 “horses” are utilized continually to drive the fan, generator, and transmission train, or are lost in the exhaust and as engine heat. Of the remaining 60 horsepower only 30 may be required to propel the car at a steady speed along the highway. If one adds an automatic transmission to this car, which may eat up 15 of the 30 remaining “horses,” one must expect to use more gasoline to maintain the same road speed.

Inclusion of an automatic transmission on a low-horsepower foreign car would not only reduce its top-speed capabilities but also its accelerating ability and economy in use of gasoline to the point where it would have little or no appeal to

the average driver. Indeed, the same reasoning when applied to the new compacts and the *Ramblers* gives a clue to one good reason for the very disappointing gasoline consumption figures many owners are reporting for these cars when the cars are equipped with automatic transmissions (and perhaps several other power-driven accessories). If you buy any small car primarily for reasons of economy you would be well advised to forego the pleasure (a pleasure to most of the fairer sex at least) of an automatic transmission (and to avoid, too, the automatic-clutch accessory offered on several makes).

Riding qualities

In general, the foreign cars do not have as good riding qualities as American cars. All of the eight foreign cars in this study, however, were judged to have satisfactory riding qualities on fairly smooth roads. Only the *Hillman* and *Simca* were judged to have satisfactory riding qualities on bumpy, winding roads; the *Volkswagen* and *Volvo* gave stiff or "bouncy" rides at higher speeds; the rides afforded by the *Morris* and *Triumph* were less satisfactory at all speeds, with the *Triumph* giving a noticeably bumpy ride on rough or bumpy roads.

Servicing

The quality and cost of the service available are probably the most important considerations involved in the purchase of a foreign car. Certainly one should make such a purchase *only* from a dealer with a good reputation in the community, who employs specially trained and competent service personnel—as a part of his own organization—and can prove to you that he has an ample supply of spare parts for your car. And if you are in doubt about his qualifications and spare-parts policy you would certainly be well advised

to make inquiries of other owners and determine whether or not they are satisfied with their purchases and the dealer's servicing policies and charges.

Many dealers in foreign cars have little interest in a customer beyond consummation of a sale, and if you are unfortunate enough to buy from that type of dealer, you may be most unhappy with your purchase. It is also the case that many of the good dealers must depend on spare parts stocks carried by a distributor in a distant city and many persons have had to be without use of their imported cars for from one week to, in some instances, several months, while the dealer was awaiting air-mail or other delivery of a needed part from the factory in Europe or from a distant parts distributor in the U.S. Dealers in U.S.-made cars built in recent years may subject customers to similar inconveniences at times, but these instances will be relatively infrequent, at worst.

Another factor of importance is that the sale of several makes of foreign cars which are not selling well at this time may be discontinued. If that should occur, one might find himself the not-so-proud owner of a so-called orphan, with no servicing facilities available, or services available only on a scarcity-price basis, in a distant city. So—unless you have really good reason to do otherwise—you would be well advised to confine your choice to one of those makes in widest sale at the time of your purchase.

When a p.o.e. (port of entry) price is given in the listings which follow, a U.S. dealer normally would add transportation charges from the port, state and local taxes if applicable, and a preparation and conditioning charge, to arrive at his selling price. Some dealers may add a substantial "pad" to the p.o.e. price.

Hillman Minx

A. Recommended

Hillman Minx (Made in England; distributed by Rootes Motors, Inc., 42-32 21 St., Long Island City 1, N.Y.) P.o.e. prices: 4-door *Special* sedan, \$1699; 4-door *Deluxe* sedan, \$1849; convertible, \$2099; 4-door station wagon, \$2299. Heater, \$60 extra. The 4-door *Special* sedan was the car tested.

The *Hillman Minx* is a well-built car, with ample room for five persons. Performance characteristics were generally above average for an imported car with an under-\$2000 price tag. The car should be, overall, well suited for use by small families in the young and middle-age groups.

General comments

The *Hillman* was well built, indeed better built than some American cars, and had adequate power for ordinary highway driving. The steering-post-mounted gearshift (a non-standard shift pattern, with four forward speeds) may be objectionable to some—particularly when there is another car with a different gearshift sequence in the family. (It is said that the company has adopted a standard shift for cars to be produced in 1960.) Indicating lights were used to indicate oil pressure and battery charge-discharge conditions. Meters are available at an extra charge. The car was found easy to enter by younger people, somewhat more difficult for older and taller persons.



Hillman Minx

Some tall drivers complained of slight fatigue in the right leg on long trips caused by their inability to find a comfortable position for the foot to operate the accelerator pedal. Headroom was adequate in both front and rear; the seats (bucket type in front, bench type in rear)

provided good support and were comfortable. Easy steering combined with moderate over-all length (about 19 in. less than *Ford Falcon*) made the car easy to handle and park. The heater capacity was judged adequate for the car

Simca Aronde

A. Recommended

Simca Aronde Deluxe (Made in France; distributed in the United States by Chrysler Corp., Simca Div., Rye, N.Y.) P.o.e. prices: *Aronde Deluxe* 4-door sedan, \$1698; *Super Deluxe* 4-door sedan, \$1798; *Elysee* 4-door sedan, \$1898. A heater is standard equipment on the *Aronde* models.

The *Simca Aronde*, in one sense, might be termed less "foreign" than the other foreign cars tested. It incorporates a combination of such well-known features as ball-joint front suspension, a full horn ring, steering-post-mounted transmission-shift lever, automatic choke, and conventional door-opening and locking arrangements. In addition, we believe that if the *Aronde* continues to be sold, servicing facilities should be satisfactory.

Riding and handling qualities

The over-all riding qualities of this car were above the average for the cars tested. The seats were comfortable, the car cornered nicely without undue leaning, and the reasonably high steering-wheel turns ratio ($3\frac{1}{2}$ turns

full left to full right) provided comfortable, easy steering without the fear of oversteering (sometimes felt in cars with a lower— $2\frac{1}{2}$ turns—ratio, such as the *Volkswagen* and *Morris Minor*, until one becomes used to it).

General comments

The *Simca Aronde* is a well-built and well-designed car. There was adequate room in the front seat for two passengers; the rear seat was barely adequate for two passengers. While leg room was satisfactory, some additional headroom would be desired by tall persons. The gearshift lever operating through four forward-speed ranges had a good feel, which contributed to easy driving. Older persons experienced some difficulty when entering through either the front or rear doors. The heating-defrosting system was judged adequate, and the brakes were found to be satisfactory.

Vision to the front, sides, and rear was satisfactory, although one rear-seat passenger did object to the post in the rear side windows. (The rear window glasses cannot be opened for ventilation.) A separate trip-mileage indicator was included by *Simca* on the car tested; this is a convenient accessory.

Volkswagen

A. Recommended

Volkswagen, Model 113 (Made in Germany; distributed in the United States by Volkswagen of America, Inc., Englewood Cliffs, N.J.) P.o.e. prices: 2-door *DeLuxe* sedan, \$1565; 2-door sunroof sedan, \$1655; convertible, \$2055; station wagon, \$2245; *DeLuxe* station wagon, \$2620. (Commercial delivery vehicles also available.) Heater is standard equipment on all models. White sidewall tires, \$25 extra. Radio and other extras are installed by the dealer.

Well built, of proven stamina, and lacking in unnecessary frills—and in some useful and needed features, as well. Although performance characteristics are only average, toughness, reliability, good behavior on the road, conscientious inspection at the factory, fine finish of body and parts, extremely long tire life, phenomenally low depreciation, and pride of ownership are important factors which helped *Volkswagen* maintain its Number One foreign car sales position in the U. S. in several years past. Exterior paint work and interior finish of *Volkswagens* are outstandingly good.

Handling qualities

The *Volkswagen*, with two comfortable, well-finished bucket-type seats in front and a full-width seat in the rear, has sufficient room for four adult passengers of normal size. The car handled well on turns. It has remarkable and outstanding ability to deal with difficult road conditions involving ice and snow. Like all rear-engine cars, it should be driven with care on turns, in order not to start a rear-wheel skid or spin.

General comments

The built-in durability of the *Volkswagen* has proven itself in the past, and minor changes in design should not affect this characteristic. Announced changes in the latest production are a new transmission support, addition of a front stabilizer, softer rear springs; doors that close more easily, a 10% increase in generator capacity, a rod instead of a cable for clutch control, and minor changes in the front seats and seat springing.

The car has only very limited ability to pass another slow-moving car on the road, and getting around a car or truck is dependent not only upon the car's power

plant but upon the expertness of the driver in shifting gears at the proper times. It is practically impossible to get into the non-synchronized first gear while the car is in motion, and shifting from fourth to third speed is often necessary even when the car is slowed down only moderately in turning a corner.

The braking action was judged satisfactory, though improvement in the holding power of the parking brake would be desirable. The heater, which formerly was inadequate for coping with a cold winter day in the northern United States, has been improved somewhat, but we believe many may still find it deficient by American standards. If the engine is used as the heat source, as is usual, of course, possibly no small-engine car and particularly no car with an air-cooled engine can furnish as much heat as many will want for driving at moderate to high speeds in zero and sub-zero weather.

Getting into and out of the *Volkswagen* was judged relatively easy for younger persons of short or average height. Older persons may have some difficulty. Some passengers commented that additional headroom and leg room in both the front and rear would be desirable.

Specifications and results of performance tests on
(Information on the Renault, Falcon, and Ford 6 has been included from previous tests for

	Fiat 600	Hillman Minx	Morris Minor 1000	Simca Aronde	Triumph Sedan	Volkswagen
Engine (and drive)						
Position.....	Rear	Front	Front	Front	Front	Rear
Rated horsepower.....	28.5	52.5	37	50	40	35
at stated rpm.....	4600	4400	4800	4800	5000	3700
Cooling system capacity, qt. with heater.....	4.5	7.4	5.9	7.5	5	air
Rpm. at 60 m.p.h.....	4525	3675	4050	3725	3975	2900
Transmission, forward speeds.....	4	4	4	4	4	4
Over-all drive ratio, high gear.....	4.8	4.55	4.6	4.44	4.55	3.6
Body and chassis, type						
	Unit	Sep.	Unit	Unit	Unit	Unit
Wheelbase, in.....	79	96	86	96.5	84	94.5
Length, over-all, in.....	130.5	162	148	164	145	160
Width, over-all, in.....	54.5	61	61	61.5	58	60.5
Turning diameter, ft.....	28.5	36	33	33.5	32	36
Trunk capacity, cu. ft.....	3.5	13.5	12	11	10	11
Road clearance, in.....	6.3	7	6.8	6.0	6.5	6.1
Other details						
Gasoline tank capacity, gal.....	7	8.7	8	11.4	8.5	10.6
Touring range on full tank (est.)†, miles.....	220	210	270	380	310	370
Approximate number of dealers claimed in U.S.....	425	800	670	725	700	400
Performance data						
Acceleration times, 0-60 m.p.h., sec.....	56	27	36.5	29.5	31	26
20-50 m.p.h., sec.....	34*	15	19*	22	16*	15*
40-60 m.p.h., sec.....	43	14	26	18	21.0	16
Miles per gallon at 50 m.p.h.....	33.5	26	35.5	35.0	38.5	37.5
Calculated top speed, m.p.h.....	61	72	71	77	75	68
Curb weight, lb.....	1325	2220	1665	2025	1680	1610
Base price (p.o.e.) for 2-door sedan with standard equipment, \$‡	1398	1699**	1495	1698**	1699	1565

† Test trip mileage times gas tank capacity.

‡ Falcon and Ford 6 prices are as delivered by the dealer.

* Third and fourth gear.

** 4-door sedan; 2-door sedan not available.

NA—Information not available.

Sep.—Separate frame and body.

Vision to the front and sides was satisfactory; it was felt, however, that it would be helpful if the rear window, which was increased in size in the 1958 model, were still larger, to provide better vision to the rear.

Lights are used instead of meters (meters are more desirable) to warn of malfunctioning of generator and inadequate oil pressure. There is no fuel indicator; rather, a reserve gas supply (1.3 gal.) must be made available when necessary by moving a not-too-easily-reached handle when the main tank supply is exhausted. In a tight spot, the need to do this, unexpectedly, could be a cause of an accident.

If you like the appearance of the car, and will not mind a probably limited heat supply on really cold days, this car is a specially good buy, if good, prompt service with moderate charges is sure to be available near by, in your town or region, and if the use of the car will be primarily for short distances. New and nearly new *Volkswagens* have often been sold at a premium when immediate delivery was required. *Volkswagen* is about the only car that has "negative depreciation" (re-selling at an actual increase above the regular "posted" price) for the first months, perhaps for the first year.

7 popular current-model foreign cars convenient comparison by the reader)

Volvo P 544	Renault Dauphine	Falcon	1960 Ford 6 (Auto.)
Front	Rear	Front	Front
85	32	90	145
5500	4200	4200	4000
8	5	9.7	16
3625	3975	2775	2750
4	3	3	Auto.
4.6	4.7	3.1	3.56
Unit	Unit	Unit	Sep.
102.5	89.5	109.5	119
175	155	181	213.5
63.5	60	70	81.5
35.5	30	37.5	43
24	7	23	33.5
7.6	7	6.5	5.5
9.4	8.5	14	20
250	300	400	340
350	800	NA	NA
18.5	NA	26.5	23.0
16	21.5	16	12.0
13.5	22.0	17	10.5
27.5	38	31	18.5
91	67	91	87
2400	1400	2395	3780
2342	1645**	1966	2505

Volvo P 544

A. Recommended

Volvo (Made in Sweden; distributed in the United States by Volvo Dist., Englewood, N.J.) P.o.e. prices: 2-door sedan, \$2330; 4-door sedan, \$2795; station wagon, \$2490. Heater and white sidewall tires are standard equipment.

The *Volvo*, along with the *Hillman Minx*, is considered above average in those respects which make for a desirable family or commuter-type car. It was considered a very well designed car, overall.

Handling qualities

The car handled very well on hilly, very rough, back-country roads at moderate speeds. The bucket-type front seats and the rear seat were found to be very comfortable on moderately long trips. Indeed, the car was judged one of the best for use on trips, partly because it had more leg, shoulder, and head room (all needed for comfort) than most of the cars tested.

The *Volvo* was easy to drive, handle, and park. The action of the 4-forward-speed gearbox and shift was satisfactory.

General comments

The brakes were very satisfactory in their operation. The heater provided ample heat for cold winter weather, a need that Swedish engineers would be aware of when designing a car, and a factor that German and French engineers were apparently unable to cope with adequately in the rear-engine *Volkswagen* and *Renault*.

Vision to the front, sides, and rear was satisfactory; a larger rear-view mirror would be desirable. The bumpers at the front and rear, which are light in weight, and skimped on many foreign cars to keep over-all weight to a minimum, were above average in strength on the *Volvo*. The steering was relatively fast for a car of this size— $3\frac{1}{2}$ turns of steering wheel from full right to full left—but the *Volvo* was easy to steer. Lugs for fastening safety belts are built-in, but the belts are available only as an accessory at extra cost.

* * *

It is felt that the following cars—the *Fiat 600*, the *Morris Minor 1000*, and the *Triumph* sedan—will be less desirable purchases, overall, to many prospective buyers than the foregoing makes which have all been listed as *A. Recommended*.

Light weight and a small-piston-displacement engine, of course, are synonymous with economy in use of gasoline. As combined in the 32-horsepower *Renault* (1425 pounds, 51.5 cubic inches) and the 36-horsepower *Volkswagen* (1610 pounds, 73 cubic inches), they provide cars which can do around 70 miles per hour, top speed, while allowing average trip gasoline consumption figures of 35 to 40 miles per gallon. In the 28.5-horsepower *Fiat 600*, however, which weighs 1335 pounds and

has an engine in which the piston displacement is 39 cubic inches, Consumers' Research believes that the performance values permitted by such a high weight-horsepower ratio will be regarded by a good many Americans as almost unsuitable for their needs in driving; they have come to expect more from an engine. The calculated top speed for the *Fiat 600*, based upon rated engine

speed at peak horsepower, is about 60 miles per hour. In testing the car it was found necessary to reduce the usual 460-pound test load (passengers, or passengers and luggage) to 200 pounds to make the 0 to 60 and 40 to 60 miles per hour acceleration runs. (With the usual passenger load, the *Fiat 600* tested did not reach the claimed 60-62 miles per hour speed.)

Fiat 600

B. Intermediate

Fiat 600 (Fiat Motor Co., Inc., 500 Fifth Ave., New York 36; made in Italy) P.o.e. prices: 2-door sedan, \$1398; 2-door sunroof, \$1460; *Jolly*, \$1906; *Multipla* station wagon, \$1658. Heater, white sidewall tires, directional signals, and undercoating are standard equipment on all models.

Although lacking in power, the *Fiat* does have several points in its favor. For short trips and around-town driving it is easy to drive and handles nicely. The gearbox, with four needed forward speeds, was found to be one of the best on cars Consumers' Research has tested. (A transmission with easy, quick shifting and a good feel is a necessity on any small car, simply because the lower gears will be used often in around-the-town and hilly-country driving. Pleasant gear-shifting, too, contributes much to the pleasure of driving a small car.)

Overall, the *Fiat 600* would seem definitely to be best adapted for use as a second or utility car in the family. Although it is not likely to be too satisfactory for driving on long trips, it should prove very satisfactory when used by the lady of the house for shopping or taking children to school, and by those who drive to work or to the railroad station or bus terminal daily.

Handling qualities

The car handled nicely, and cornering qualities were satisfactory. The small amount of braking provided by the engine (in the top- and third-gear range) was noticeable in descending hills. The heater was judged satisfactory for normal winter temperatures, but would likely prove wanting on a really cold winter day. (Reports from readers on heat supply experience in zero- to +10° weather with this and other low-power cars, including the 1960 *Volkswagen*, will be appreciated.) The three-position valve control for the heater-defroster was poorly located in the center of the car just in front of the back seat.

Vision from inside the car was satisfactory, although some drivers felt that visibility of the road to the rear should be improved (a point of special importance for any very small car). The individual front seats and the rear seat were comfortable, and headroom in both front and rear was adequate. Some additional leg room in the front, however, would be desirable. Overall, the passenger compartment was judged sufficiently large to provide reasonable comfort on short trips, for people of average size.

General comments

The doors are large and provide for easy entrance and exit. This advantage, however, is attained in part by placing the hinges at the rear of the doors, a position far less desirable than front hinging from the standpoint of safety. The back seat side windows are adequate in size but as they do not open, there is a possible disadvantage to rear-seat passengers in hot weather. The car is very short, with an over-all length of 10 ft. 10 in. compared to 12 ft. 11 in. and 13 ft. 4 in., respectively, for the *Renault* and the *Volkswagen*. Short length combined with easy steering and small turning circle make the *Fiat* a very easy car to maneuver into a small parking space. (Even with the 25 in. longer *Renault*, one can drive into most parking spaces head on, without need to back and fill as with longer cars.) Front-on parking gives great advantages not only in saving time and effort, but also in reducing hazard to the driver and to those passing in other cars.

* * *

Consumers' Research test drivers also drove a *Fiat 1100* 4-door sedan (\$1743 p.o.e.) but did not subject it to detailed performance tests. The wheelbase of the *1100* is 92 inches or about 14 inches longer than that of the *600*, and the car is about 2 feet longer overall and about 650 pounds heavier. The more powerful engine (rated 48 hp. at 4800 rpm.) used in the considerably heavier *1100* provided a noticeable improvement in performance qualities.

This car gave a good ride on most types of roads at speeds up to 50-55 miles per hour and cornered very satisfactorily. Acceleration in first, second, and third gears was satisfactory but was somewhat deficient in fourth. The action of the brakes and the gearbox was satisfactory. The over-all performance of the heater-defroster was better than on the *Fiat 600*. A lamp flashes when the fuel supply is running low. The front doors on this car are hinged at the rear, a design that is undesirable from the standpoint of safety. (The rear doors are hinged at the front, in the conventional way.)

Morris Minor 1000

B. Intermediate

Morris Minor 1000 (Made in England; distributed in the United States by Hambro Automotive Corp., 27 W. 57 St., New York 19) P.o.e. prices: 2-door sedan, standard and deluxe, \$1495-\$1599; 4-door sedan, standard and deluxe, \$1574-\$1636; convertible, \$1678-\$1718; station wagon, \$1798-\$1825. White sidewall tires, \$30 extra. Heater, \$50 extra.

This car was found to be easy to handle, drive, and park. It was judged satisfactory for relatively short trips—shopping and commuter-type travel. Noise from the motor was very noticeable.

General comments

With respect to performance, the *Morris* is satisfactory, but on the slow side; it is not a car with which one will do a lot of passing of other cars in fast traffic. For trip driving, additional leg and shoulder room would be desirable in both the front and back seats. Most persons found the car relatively easy to enter. Although the braking action was satisfactory, it was felt that additional holding power for the parking brake would be desirable. The body was welded (unit construction) but estimated to be on the light side as compared with some other cars tested. The heater-defroster was of satisfactory design.

Visibility to front, rear, and sides was satisfactory



generally, although one driver complained of the view to the rear and would have welcomed a larger rear-view mirror. Windshield-wiper action was barely adequate; longer wiper blades would have been desirable to provide greater coverage. The door on the right side could be locked from the outside, that on the left was locked from inside the car; this might at times be a rather inconvenient arrangement.

It is especially worth noting that the makers of the *Morris* have sufficient faith in their car and the workmanship in it to give a one-year warranty on parts and labor. Other automobile manufacturers, both domestic and foreign, would do well to adopt a similar policy.

Triumph TR-10

B. Intermediate

Triumph TR-10 (Made in England; distributed in the United States by Standard-Triumph Motor Co., Inc., New York 19) P.o.e. prices: 4-door sedan, \$1699; heater, \$49; white sidewall tires, \$25; radio, \$72.

In view of its easy steering and ease of parking, as well as good gas mileage, the *Triumph* would, we believe, be a good choice as a second car for local commuting and short shopping trips. Its light construction, mediocre acceleration, and bumpy ride at turnpike speeds would tend to reduce its value as all-round transportation.

General comments

A small four-door sedan in the size range of the *Morris Minor* and *Renault Dauphine*, the *Triumph* had a "unitized" body but its construction was judged to be somewhat light. The *Triumph* had an excellent 4-speed transmission. Acceleration was not as good as one might expect in a small car. Braking qualities with the foot brake were exceptionally good; the holding power of the parking brake was judged only fair.

The *Triumph* handled well on curves and was easy to

shift, drive, and park. The two separate front seats, and the rear seat as well, were found to be of rather light construction. It was judged that the front seats needed stronger springs and extra padding. Headroom was ample in front and rear. The leg and foot room would probably be sufficient for short around-the-town trips, but additional leg and foot room would be desirable for long trips.

The clutch and brake pedals were too close together; this is a fault often found on the small imported cars tested by Consumers' Research. (It can present a real problem for men with large feet, or persons wearing over-shoes.)

Acceleration figures for the *Triumph* were found to be somewhat slower than the *Volkswagen* and, therefore, the passing ability of the *Triumph* would also be limited. Visibility was judged good in all directions from the driver's seat.

Consumers' Research has been informed that the *TR-10* sedan will be discontinued in early spring of 1960. A new model will then be placed on the market. Among the many changes that are expected will be the use of chassis frame and separate body rather than the unitized construction now being used.

Single-lens reflex cameras—Part II

AFTER STUDYING a number of the latest single-lens reflex cameras, Consumers' Research reached the conclusion that for most photographers there is no need to give up a good 35 mm. range-finder camera for a 35 mm. single-lens reflex. Further studies of additional SLR cameras confirm this point of view, for these cameras are full of complicated, closely-coordinated fast-moving parts and, while more versatile than other 35 mm. cameras when equipped with expensive accessory lenses, they are often not much more useful, and may not be as reliable as the much simpler, long-popular cameras with combination view-finders and range-finders.

With normal lenses, SLR cameras focus down to about 1.5 feet, compared to about 3 feet for cameras with view-finders and range-finders. It is evident that when close-up pictures are to be taken, as in much scientific photography and for workers in medicine, dentistry, and nature photography, the SLR camera has outstanding advantages. It is not, however, by any means a necessity for those who already have a first-rate 35 mm. range-finder camera such as the *Ambi-Silette*, *Minolta A*, *A2*, or *V2*, or *Konica III*, *Canon*, *Nikon*, *Contax*, or *Leica*.

Built-in exposure meters

Some SLR cameras (*Kodak Retina*, *Voigtlander Bessamatic*, *Contaflex*) are equipped with built-in exposure meters. Consumers' Research does not consider these as desirable as separate meters. Other makes have small separate meters available at extra cost which fit on the camera and are mechanically coupled to the shutter mechanism.

The disadvantages of built-in meters are: 1) If the meter fails, the entire camera must be sent away for repair. 2) Built-in meters are of necessity very small (true also of the detachable coupled type), and not as sturdy or reliable as the larger separate meters. 3) The tiny dials with their small figures are difficult to read, and a real problem for persons whose eyesight is not of the best. 4) Many amateur photographers in using a camera with a built-in meter tend to take all readings from the position the camera will be in when the exposure is being made. This, for the reasons discussed in our article on electric-eye cameras in the November 1959 BULLETIN, leads very often to incorrect exposure, particularly when the scenes are not evenly lighted (many scenes, outdoors and indoors, of course, are not). 5) The extra amount charged for a camera with a built-in meter is usually several times the price

Part I of this article, which appeared in the January issue, discussed single-lens reflex cameras in general, their shutters, and whether or not the average amateur photographer should buy a camera of the SLR type. Part I also included ratings of Minolta SR-2, Nikon F, Canonflex R, and Retina Reflex S.

at which a low-priced but good separate meter can be purchased.

Quick-return mirrors

In most of the older single-lens reflex cameras it is necessary to advance the film and cock the shutter to bring the mirror into the viewing position. The mirror flips up when the exposure is made and remains in that position (with no image seen in the finder) until the user operates the film transport mechanism. In the newer models the mirror is always in the viewing position except for the brief period of the exposure. This is considered a very desirable improvement.

Waist-level versus prism view-finders

There are two kinds of view-finders common on SLR cameras. In the so-called waist-level finder, the image is projected from the lens to a 45-degree mirror, thence to a tiny hooded $\frac{7}{8} \times 1\frac{1}{4}$ inch ground-glass screen. Even with the built-in magnifier provided, viewing and focusing are difficult for most users. Furthermore, although the image appears right side up, it is reversed left to right; this reversal of position and motion can be confusing when one is taking pictures of moving objects.

In recent months a number of manufacturers have adopted view-finders that use a reflecting system commonly called a pentaprism. This five-sided prism is mounted above the focusing screen; the image of the scene to be photographed is projected through the taking lens to a 45-degree mirror, thence to the top face, front face, and rear face of the prism, where it is viewed through an eyepiece, right side up and not reversed. The eyepiece lens usually magnifies the image to apparent life size when a normal 50 mm. focal length lens is used. With the pentaprism arrangement, the image is much brighter and easier to focus than that with the waist-level finder. On some SLR cameras, manufacturers have incor-

porated a split-image range-finder into the view-finder. A part of the image used for range-finding purposes is visible in a small clear circle in the center of the ground-glass screen. Unfortunately this arrangement has a disadvantage in that, under poor light conditions where a good view of the scene is most needed, half the area of the range-finder image becomes completely dark, making the range-finder useless.

Preset and automatic-set lenses

In order to obtain an image of maximum brightness on the focusing and viewing screen, it is necessary to focus an SLR camera with the lens wide open (at maximum aperture). With a *pre-set lens*, the lens must be set in advance to the aperture desired, then opened to full aperture for focusing. Just before the picture is taken, the diaphragm setting ring is turned manually until it comes up against a stop, which has been set at the preselected opening. This is done without need to move the camera from the viewing position.

In *automatically-set lenses*, the diaphragm is coupled to the shutter release so that when the shutter is operated the lens aperture automatically closes down to the preselected aperture and then opens again to full aperture after the exposure has been made. In one type of *semiautomatically-set lens* (Minolta SR-2) the lens aperture automatically closes down to the preset value for the exposure when the shutter release is operated and stays closed down until reset by the motion of the film advance lever.

In another type of semiautomatic (Beseler Topcon, Heiland Pentax), the aperture mechanism must be cocked manually by a separate lever to full opening before each exposure; then when the exposure is made, the aperture automatically changes to the smaller one determined by the preselected stop and remains there until it is reset.

A. Recommended

Heiland Pentax, Model H2 (Distributed by Heiland Div., Minneapolis-Honeywell, Denver 22, Colo.; made in Japan) \$179.50; case, \$15. *Auto Takumar f/2* coated lens of 55 mm. focal length.



Heiland Pentax



Beseler Topcon



Contaflex Super

Focal-plane shutter (cloth curtain) with rated speeds of 1/500 to 1 sec., time, and bulb. Did not have delayed-action release (self-timer).

Semiautomatic diaphragm, which must be cocked separately from the shutter, closes to predetermined aperture when shutter is tripped; it does not return to full aperture after shutter is tripped. The aperture can be closed manually to a preselected setting by depressing the shutter release button part way in order to note depth of field.

Eye-level pentaprism view-finder (not removable) with Fresnel lens lacks a range-finder, but has a "microprism" at its central area which emphasizes the out-of-focus appearance of the image when it is not in focus. FP-X synchronization. (M class bulbs can be used only at 1/15 sec. and slower speeds.) An accessory clip, available as an extra, fits into slots in the view-finder eyepiece.

The film is advanced and the shutter is set by a single stroke of a lever. It is important to note that the shutter must be cocked before the camera is focused; otherwise the mirror will not be in the correct position for accurate focusing. The camera has a folding rewind crank and an indicator dial which can be set to show ASA number and type of film being used; there is also an indicator to show when the shutter is cocked and film advanced. The exposure counter is reset manually.

Quality of lens, good: resolved 56 lines per mm. at center, 40 lines per mm. at edges, at full aperture. Shutter speeds were within permitted tolerances. Focusing scale was inaccurate by about 4% at distances under 4 ft.

Pentaprism view-finder image was relatively bright and even. Level of shutter and mechanical noise, relatively high.

A neat, compact camera, relatively light in weight for a camera of SLR type (1 lb. 11 oz.; case, 9 oz.). **2**

Beseler Topcon (Distributed by Charles Beseler Co., 219 S. 18 St., East Orange, N.J.; made in Japan) \$295; case, \$18.50.

Auto Topcor f/1.8 coated lens of 58 mm. focal length. Fully interchangeable bayonet-mount lenses. Focal-plane shutter (cloth curtain) with rated speeds of 1/1000 to 1 sec., and bulb. Quick-return mirror. The camera did not have a delayed-action release (self-timer).

Semiautomatic diaphragm, which must be cocked to full aperture by a separate lever before each exposure. The aperture closes down automatically to the preselected stop when the shutter is released.

Eye-level pentaprism view-finder and split-image range-finder. A waist-level view-finder quickly interchangeable with the pentaprism finder is available at extra cost (\$35). F-X synchronization.

The *Topcon* has a folding rewind crank and an indicator which can be set to show the ASA number and type of film loaded in the camera. An accessory shoe available at extra cost (\$3) clips below the indicator that shows the type of film.

Quality of lens, good: resolved 56 lines per mm. at center, 40 lines per mm. at edges, at full aperture.

Shutter speeds were within permitted tolerances. View-finder image was bright and clear at center, but there was some darkening at the corners. Shutter and mechanical noise, relatively high.

This camera can use without an adapter all *Exakta* lenses except those with automatic diaphragm. The first sample of the *Topcon* tested was defective in that a number of film frames were left blank (unexposed) when camera was operated normally; a second camera, however, was satisfactory. Relatively heavy in weight (2 lb. 5 oz.; case, 10 oz.).

A purchaser now receives as a premium a *Primo-Jr* twin-lens reflex (not tested by CR) made by the same manufacturer (Tokyo Optical Co.) with each purchase of a *Beseler Topcon* single-lens reflex camera. This plan has been introduced to clear present stocks before the new models appear in March and thus help to avoid selling models about to be discontinued at cut prices. 3

A. Recommended (qualified)

Contaflex Super (Zeiss Ikon; distributed by Carl Zeiss, Inc., 485 Fifth Ave., New York 17; made in West Germany) \$199; case \$15.

Carl Zeiss *Tessar* *f*/2.8 coated lens of 50 mm. focal length. Lenses not fully interchangeable (supplementary lenses *f*/4 35 mm. and *f*/4 85 mm., interchangeable with front element of regular lens, are available at \$89 and \$99, respectively). *Synchro-Compur* between-the-lens shutter with rated speeds of 1/500 to 1 sec., and bulb. Shutter speeds are cross coupled to the *f* stops and the built-in exposure meter is also coupled to the *f* stops.

To operate, the film speed indicator is set to the ASA speed number of the film being used, and the shutter speed setting ring is turned until a small circle seen through a window on the top of the camera is under the meter pointer. While the subject is being viewed through the view-finder, a reflection of the meter pointer is visible at the right-hand side, and the light selector disk must be turned until the reflected pointer coincides with a setting mark. (Judged not as convenient as the system used in the *Voigtlander Bessamatic*.)

Delayed-action release (self-timer). The automatic diaphragm closes to a preselected aperture when the

shutter is tripped. The film must be advanced to return the mirror to the viewing position and the lens stop to full aperture.

Eye-level pentaprism view-finder (not removable) with Fresnel lens and split-image range-finder. Accessory shoe was provided on the top of the prism housing for a flash gun. The film is advanced and shutter cocked by a single stroke of a lever. Depth of field scale. Exposure counter is reset manually. Rewind is by a folding crank. A dial under the rewind crank can be set to show the type and ASA number of film loaded in the camera. M-X synchronization.

Quality of lens, good: resolved 68 lines per mm. at center, 40 lines per mm. at edges, at full aperture. (Supplementary telephoto and wide-angle lenses were not tested.)

Shutter speeds were within permitted tolerances. Image in view-finder was very bright and even. Level of shutter and mechanical noise, moderate. Relatively light in weight (1 lb. 14 oz.).

Important: The *A-Recommended* rating for this camera applies only for those who expect to have only limited use for telephoto or wide-angle lenses. Others would perhaps find the SLR cameras with fully interchangeable lenses much more desirable. For discussion of this point, see January 1960 *BULLETIN*, page 12. 2

B. Intermediate

Voigtlander Bessamatic (Distributed by H. A. Bohn & Co., Chicago 30; made in West Germany) \$220; case, \$14.50.

Color Skopar X *f*/2.8 coated lens of 50 mm. focal length. Fully interchangeable bayonet-mount lenses. *Synchro-Compur* behind-the-lens shutter with rated speeds of 1/500 to 1 sec., and bulb. Shutter speeds are cross coupled to *f* stops and the built-in exposure meter is also coupled to the stops.

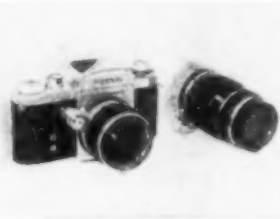
To operate, the film index dial is first set to the ASA number of the film being used. A shutter speed is selected that is suitable for the subject; then the film index knob is turned until a pointer coincides with the needle of the exposure meter. This automatically sets the aperture for the exposure determined by the meter. If the shutter speed selected is too high or too low for the light conditions, indicated by one's not being able to make the needle and pointer coincide, further turning of the film index knob will change the shutter speed to a setting at which the needle and pointer can be brought into coincidence. The needle of the meter and pointer are visible in the view-finder; this is considered to be a superior system to that used in the *Retina Reflex S*.



Voigtlander Bessamatic



Exakta VX IIA



Miranda C

Delayed-action release (self-timer). The automatic diaphragm closes to a preselected aperture when the shutter is tripped and remains at that aperture after exposure. The film must be advanced to return the mirror to the viewing position. Eye-level pentaprism view-finder (not removable) with split-image range-finder. There was no accessory shoe for attaching a flash gun. The film is advanced and shutter cocked by a single stroke of a lever. This camera had automatic depth-of-field indication similar to the *Retina Reflex S* (a good feature). Before the camera is loaded with film, the exposure counter must be manually set by turning the sprocket shaft inside the camera (judged poor design); the counter indicates the number of exposures remaining on the film. M-X synchronization.

Rewind is by a knob, which is satisfactory but not as quick or convenient as a crank. A dial on the top of the film transport lever can be set to indicate the type of film but not the speed (ASA number).

A correction scale was provided for adjusting exposures when filters are used.

Quality of lens, fairly good: resolved 56 lines per mm. at center, 28 lines per mm. at edges, at full aperture.

Shutter speeds were within permitted tolerances. Image in view-finder was very bright and even. Shutter and mechanical noise, moderate.

A very well-built camera, small and compact for a single-lens reflex.

Lack of quick-return mirror, and the non-removable built-in meter would seem to make the *Voiglander Bessamatic* less desirable than some of the other single-lens reflex cameras listed.

Medium heavy in weight (without case, 2 lb.). **2**

Exakta VX IIA (Distributed by Exakta Camera Co., 705 Bronx River Rd., Bronxville 8, N.Y.; made in Germany, Russian Zone) \$399; case, \$12.

C. Z. Jena *Biotar* f/2 coated lens of 58 mm. focal length. Fully interchangeable bayonet-mount lenses. Focal-plane shutter (cloth curtain) with rated speeds of 1/25 to 1/100 sec., time, and bulb on one dial, 1/5 to 12 sec. on a second dial. Delayed-action release (self-timer). Did not have a quick-return mirror.

The *Biotar* lens had a semiautomatic diaphragm which must be cocked to full aperture before each exposure (other lenses available for this camera are fully automatic).

Eye-level pentaprism view-finder and split-image range-finder. A waist-level view-finder quickly interchangeable with the pentaprism finder is available at extra cost (\$18.50). F-M-X synchronization.

The film is advanced and shutter cocked by a single stroke of a lever, except that on slow shutter speeds the slow-speed shutter dial must be wound in addition.

Had a knurled knob for rewinding film and an indi-

cator to show ASA speed of black-and-white film or type of film with which camera was loaded. Exposure counter must be manually reset to zero.

Shutter speed setting mechanism was much more complicated to use than other cameras tested. Film must be advanced and shutter cocked before shutter speed is set, and black numbers on slow-speed dial must never be used unless fast-speed dial is set at B or T. The *Exakta* had a built-in knife for cutting off film if wound into a magazine instead of the usual take-up spool or to remove an exposed portion of film.

Shutter and mechanical noise, relatively high. Some falling off in brightness at edges of view-finder.

Quality of lens, fairly good: resolved 68 lines per mm. at center, 28 lines per mm. at edges, at full aperture.

Shutter speeds were within permitted tolerances. Medium heavy in weight (2 lb. 2 oz.; case, 9 oz.). **3**

Exakta Light-Meter VX-IIa. \$429. Same as model listed above except that a pentaprism unit containing a light-meter (available separately at \$85) is substituted for the regular pentaprism finder. **3**

Miranda C (Distributed by Allied Impex Corp., 300 Fourth Ave., New York 10; made in Japan) \$279.95; case, \$14.95.

Soligor f/1.9 coated lens of 50 mm. focal length. Lenses are fully interchangeable. Bayonet lens mount which can be adapted to take *Praktika*-type screw-threaded and *Exakta*-type bayonet-mount lenses.

Focal-plane shutter (cloth curtain) with rated speeds of 1/1000 to 1 sec., and bulb. Quick-return mirror.

Automatic diaphragm closes to preselected aperture when shutter is tripped, then returns to full aperture after exposure. The automatic mechanism (which is built into the lens rather than the camera) can be disconnected—if desired—by moving a control button, to permit viewing the depth of field before the picture is taken. Removable eye-level pentaprism view-finder with Fresnel lens; no range-finder. A split-image range-finder is available at extra cost.

FP-X synchronization (M-5 bulbs can be used at speeds of 1/60-1/1000, No. 5 bulbs at 1/15 to 1 sec.).

The film is advanced and shutter cocked by a single stroke of a lever. Folding rewind crank and indicator to show ASA number and type of film loaded in camera. Exposure counter must be manually reset to zero.

Shutter and mechanical noise, relatively low. Slight falling off in brightness at corners of view-finder. The separate dials for high and low shutter speeds were somewhat difficult to set.

Quality of lens, fairly good: resolved 56 lines per mm. at center, 28 lines per mm. at edges. Shutter speeds were within permitted tolerances. Medium heavy in weight (2 lb. 1 oz.; case, 10 oz.). **3**

Weakening of Federal protection of the food supply

Food control officials have in the past held that artificial sweeteners, such as saccharin and the cyclamates: should be present only in foods utilized by persons "who for reasons of health must restrict their intake of ordinary sweets."

This principle has been disregarded in a recent

action by the U.S. government's Meat Inspection Division, which now permits packers to add sodium cyclamate to bacon as a sweetener, apparently without regard to any use of the bacon as a dietetic food, and without respect to the uncertain wholesomeness of the cyclamates.

Telephoto lenses for 35 mm. single-lens reflex cameras

Several performed very well, as well indeed

as first-class lenses of normal focal length

THE longest focal length for a normal lens for a 35 mm. camera is 58 mm. Lenses of longer focal length give bigger images of distant objects; they are called long-focus lenses, but not all long-focus lenses are telephoto lenses. A true telephoto lens has a positive element in the front and a negative element in the rear, and has a back focus (distance from the back element of the telephoto lens to the film when the lens is focused at infinity) that is less than the focal length of the lens. Use of a telephoto lens permits large pictures of distant objects to be taken without extension of the lens to a considerable distance beyond the camera body, an important feature, especially in 35 mm. cameras, which users like to have reasonably compact and convenient to handle. (Long-focus lenses of the normal construction would be impractical in many cases, particularly with small cameras.)

Telephoto lenses that are most generally useful for 35 mm. cameras are those of 85 mm. to 135 mm. focal length. In the 35 mm. camera size, and when of moderate speed ($f/3.5$), they are not too large and heavy to handle conveniently. Telephoto lenses for 35 mm. cameras that have a focal length greater than 100 mm. and are faster than $f/3.5$ are bulky and heavy. For example, the $f/2$, 135 mm. *Topcor* for the *Beseler Topcon* weighs twice as much as the $f/3.5$, 135 mm. *Miranda Soligor* and its price is more than three times as high (\$335 against \$100). We recommend that, unless one has a specialist's need for a fast telephoto lens, the $f/3.5$ and slower lenses with a focal length of not more than 135 mm. are to be preferred. For any but the professional photographer or advanced expert amateur (or a person with money to spare), it is best not to buy an extra-fast lens or a lens of very long focal length unless there is real need for it.

In the medium-long focal lengths, telephoto lenses are not only useful for photographing distant objects but because of their relatively shallow depth of field are well suited to portrait work.

Listings of the lenses are in alphabetic order within the *A*- and *B*-rated groups.

A. Recommended

Nikkor-Q Auto $f/3.5$ 135 mm. (Nikon Inc., 111 Fifth

Ave., New York 3; made in Japan) \$179.50, with plastic case and lens shade. Automatic diaphragm with click stops. Focuses from 5 ft. to infinity. Depth-of-field scale. Bracket provided for coupling to exposure meter. Quality of lens, good: resolved 56 lines per mm. at center, 40 lines per mm. at edges, at full aperture. Weight: lens, 1 lb. 13½ oz.; shade, 1½ oz.; case, 4 oz.

Steinheil Quinar $f/3.5$ 135 mm. (Distributed by Exakta Camera Co., Bronxville 8, N.Y.; made in East Germany, Russian Zone) \$189.50. Automatic diaphragm with click stops. Focuses from 5 ft. to infinity. Depth-of-field scale. Quality of lens, good: resolved 56 lines per mm. at center, 40 lines per mm. at edges, at full aperture. Weight: lens, 2 lb.; case, 10 oz.

B. Intermediate

Canon R $f/3.5$ 135 mm. (Canon Camera Co., 404 Fourth Ave., New York 16) \$125, with leather case. Manually-set diaphragm with click stops. Focuses from 5 ft. to infinity. Depth-of-field scale. Design was such that unless extreme care was used, changing the stop opening would change the focus. Quality of lens, fairly good: resolved 56 lines per mm. at center, 28 lines per mm. at edges, at full aperture. Weight: lens, 15½ oz.; case, 6 oz.

Minolta Tele Rokkor-QE $f/3.5$ 100 mm. (Distributed by F. R. Corp., 951 Brook Ave., New York 51; made in Japan) \$100, with leather case and lens shade. Semi-automatic diaphragm with click stops. Focuses from 4 ft. to infinity. Lock for each stop opening. Light-value scale. Depth-of-field scale. Quality of lens, fairly good: it resolved 40 lines per mm. over entire field, at full aperture. Weight: lens, 13 oz.; shade, 2 oz.; case, 4 oz.

Miranda Soligor $f/3.5$ 135 mm. (Distributed by Allied Impex Corp., 300 Fourth Ave., New York 10; made in Japan) \$100. Automatic diaphragm with click stops. (Automatic feature could be disconnected for manual operation of diaphragm.) Focuses from 6 ft. to infinity. Depth-of-field scale. Quality of lens, fairly good: resolved 56 lines per mm. at center, 28 lines per mm. at edges, at full aperture. Weight: lens, 1 lb. 5 oz.

R. Topcor $f/2$ 135 mm. (Charles Beseler & Co., 19 S. 18 St., East Orange, N.J.; made in Japan) \$335. Pre-set diaphragm with click stops. Focuses from 6 ft. to infinity. Depth-of-field scale. Lens mount had built-in tripod socket. Quality of lens, fair: resolved 48 lines per mm. at center, 20 lines per mm. at edges, at full aperture. Weight: lens, 2 lb. 9 oz.

Read the label?

A degree in organic chemistry would help a little

"Read the label!—yes; but who will tell me what the chemical names *mean*?" writes a reader who encloses this list of ingredients torn from the side panel of a box containing *Grape-Nuts* breakfast cereal:

POST GRAPE-NUTS IS MADE FROM WHEAT, MALTED BARLEY, SALT, YEAST, BUTYLATED HYDROXYANISOLE AND BUTYLATED HYDROXY-TOLUENE IN CORN OIL WITH ACETYL TARTRATE MONO AND DIGLYCERIDES ADDED AS CHEMICAL PRESERVATIVES TO HELP MAINTAIN FRESHNESS, NIACIN, VITAMIN B₁.

Who, indeed, will tell the consumer the significance in terms of flavor and healthfulness of the many added chemicals with their strange and unfamiliar names? And does such a simple, commonplace sort of product really *need* so many such strange ingredients? Wouldn't a few known and familiar ingredients with shorter storage life be better, perhaps, with none of the uncertainties of "butylated hydroxytoluene" and "acetyl tartrate mono and diglycerides"? And no vitamins except those natural to the food materials in the product? (Foods will have to be better, and fresher when they do not contain chemical preservatives, and when any food values they may lack cannot be made up for by addition of factory-made vitamins.)

Covering one of the two large panels of the package is a "Quiz," so-called, comprising a series of 10 statements about protein (in quantity of which *Grape-Nuts* is said to excel any other cereal) which the consumer is asked to answer "true" or "false," in blanks provided. The wording on the package notes all the statements are "true"—and, as it comes out, they are all highly favorable to *Grape-Nuts*. (The discerning reader, however, may wonder about the claim, "*Grape-Nuts* with milk and sugar is a good source of high quality protein," since even if true, this statement gives no indication of the relative importance of the cereal and the milk in supplying the alleged nutritive value. Cereal proteins are *not* high-quality proteins; high-quality proteins are those found in meat, fish, shellfish, eggs, cheese, and some other animal food products.)

May we suggest that the makers of *Grape-Nuts* consider a change in package design that will give the consumer a chance to express his knowledge of the action, wholesomeness, and digestive safety of butylated hydroxyanisole and butylated hydroxytoluene and the other additives? The way



The arrow on the package shown above points to the list of ingredients which our reader found disturbing and beyond a layman's comprehension.

consumers answer *these* questions should be of the utmost interest to General Foods marketing executives.

If you feel about this as do we and our reader in Des Moines who sent in the list of *Grape-Nuts*' ingredients, perhaps you will wish to write the Post Division, General Foods Corp., Battle Creek, Michigan, and ask them if they deem it really necessary and in the public interest to draw upon so many products of the chemical industries and to put so many and such strange ingredients into a popular breakfast food. And what qualified independent scientists' guarantees can they give you that each and every one of the chemical additives is wholesome and safe, harmless to young and old, if *Grape-Nuts* is consumed in generous quantities daily, as the manufacturer would wish, over a lifetime? If you write, you may wish to send to CONSUMER BULLETIN a copy of your letter and the manufacturer's reply to your questions.

Small radio sets

ALTHOUGH transistor portable receivers were expected to account for about half the radios sold this past Christmas, the time-honored ac-dc table-model and table-model radios with a built-in clock are still very popular, and add up to a large total in numbers of sets sold. Total production of radio receivers in 1959 was estimated to be 9.2 million sets, an increase of 16 percent over 1958 and a 12-year record high in radio sales.

The greatest sales of clock radios were in the simplified models in the lower-price brackets (\$25 to \$30). With table-model radios also, the trend is toward the so-called low-end models, or sets selling at \$15 to \$20. Indeed, 50 percent of the table-model radios sold in 1959 were in this low-price bracket.

New developments?

There have been no new developments in design or construction of small radios this year. Actually, with the major proportion of factory production aimed at the low-priced models, and when one considers the great competition in this field, it is not surprising to find the circuit designs of 10 of the 11 radios listed to be quite similar. These 10 sets all used the same five-tube types (which have been used for the past several years in most table radios) in their simple conventional superheterodyne design. Nearly all of the small radios on the market and all of those listed in the present report have plastic cabinets.

Clock radios

Clock radios can be placed roughly into two categories. The plain clock radio is usually found in the lowest-priced group of a manufacturer's line of merchandise. This kind of clock radio has an electric alarm clock that simply switches on the

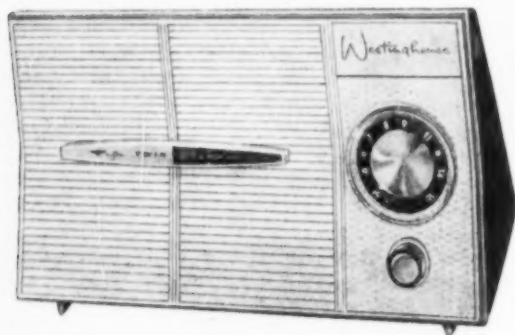
radio at the pre-set time. The more complicated kind of clock radio has in addition to time-keeping and alarm-clock functions a buzzer alarm that sounds, usually a few minutes after the radio has come on (if the user chooses to be awakened by the buzzer), an appliance outlet with which a coffee maker or other appliance (if not above 1100 watts capacity) will be turned on by the clock at a selected time, and a so-called sleep switch. The sleep switch enables one to set a delayed-action mechanism to turn the radio off at night at about the time the user estimates he will have fallen asleep (usually 30 to 60 minutes' delay). One radio tested, the *Motorola C3G1*, had a device for automatically repeating the buzzer alarm at 8-minute intervals, allowing the sleeper an extra 20 winks without danger of oversleeping.

All of the clock radios utilized the same 5-tube "ac-dc" circuits; however, because the clocks can be used only on 60-cycle alternating current, the sets must be considered as for alternating current only.

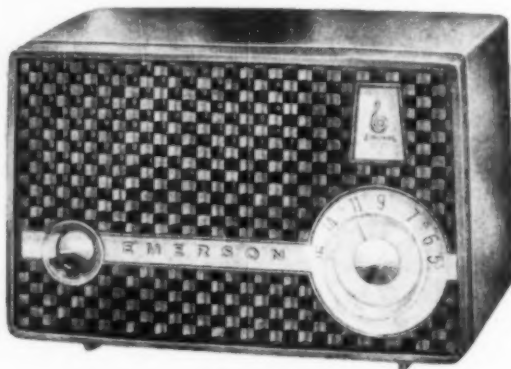
None of the clock radios had a dial light; absence of one would be an advantage when the radio is used at night as a sleep inducer. On the other hand, lack of the dial light would make tuning the radio in a dark or dimly lit room difficult.

Of the table-model radios tested, only the *GE T132* had a dial light. All of the radios tested except the two *Zeniths* and the *Olympic* utilized so-called "printed circuit" wiring in their construction. All radios tested had *UL* labels except as noted in the listings.

The radios are listed in alphabetical order within the *A*-, *B*-, and *C*-rated groups in the separate type classifications.



Westinghouse H70ST5



Emerson 924B



Motorola A1W



Olympic 456W

Table-model radios

A. Recommended

Westinghouse H705T5 (Westinghouse Electric Corp., Metuchen, N.J.) \$29.95.

A good receiver in most respects.

Plastic cabinet. Two 4-in. speakers. Workmanship, good. Ease of tuning, very good. Sensitivity and selectivity, good. Volume of sound output, satisfactory. Tonal quality, good. Ease of servicing, very good.

B. Intermediate

Emerson 324B (DuMont Emerson Corp., Jersey City, N.J.) \$28.

A table model of average quality.

Plastic cabinet. 4-in. speaker. Workmanship, fair. Ease of tuning, fair. Sensitivity, good; selectivity, very good. Volume of sound output, satisfactory. Tonal quality, good. Ease of servicing, relatively poor. No UL label.

General Electric T132 (General Electric Co., Utica, N.Y.) \$29.95.

An average receiver in most respects.

Plastic cabinet. 5 x 7 in. oval speaker. Workmanship, good. Ease of tuning, very good. Sensitivity, good; selectivity, fair. Volume of sound output at low or

moderate distortion level was only fair. Tonal quality, good. Ease of servicing, very good.

Motorola A1W (Motorola Inc., Chicago) \$14.95 to \$16.95.

Slightly below average in some important respects.

Plastic cabinet. 4-in. speaker. Workmanship, good. Ease of tuning, fair. Sensitivity, good; selectivity, good. Volume of sound output, fair. Tonal quality, good. Ease of servicing, fair.

C. Not Recommended

Olympic 456W (Olympic Radio & Television, Div. of The Siegler Corp., Long Island City 1, N.Y.) \$14.95.

Four-tube circuit gave poor performance.

Plastic cabinet. 4-in. speaker. Workmanship, only fair. Ease of tuning, fair. Sensitivity, fair; selectivity, very good. Volume of sound output at low or moderate distortion level was low. Tonal quality, poor. Ease of servicing, relatively poor. No UL label.

Sylvania 1206 (Sylvania Electric Products Corp., New York 19) \$27.95.

An average receiver but with shock hazard at an accessible point (leakage current was excessive).

Plastic cabinet. 4-in. speaker. Workmanship, fair. Ease of tuning, good. Sensitivity, good; selectivity, very good. Volume of sound output, very good. Tonal quality, fair. Sufficient leakage current (7 ma., from phonograph input jack) to constitute a dangerous shock hazard. Ease of servicing, fair. New model, 5712, at \$29.95 is essentially similar; it has different knobs and color combinations of cabinets.

Zenith B509F (Zenith Radio Corp., Chicago 39) \$22.95.

A good receiver, but with shock hazard (leakage current was too high).

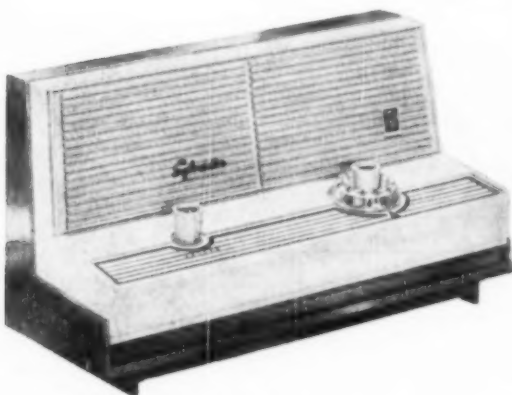
Plastic cabinet. 3½-in. speaker. Workmanship, good. Ease of tuning, poor. Sensitivity, good; selectivity, very good. Volume of sound output good. Tonal quality, very good. Excessive shock hazard present (leakage current, 4 ma.). Ease of servicing, good.

Clock radios

B. Intermediate

Emerson 916B (DuMont Emerson Corp.) \$44.

A good radio, but its clock feature has some limitations as a timing device.



Sylvania 1206



Emerson 916B

Plastic cabinet. 4-in. speaker. Workmanship, good. Ease of tuning, fair. Sensitivity, good; selectivity, very good. Volume of sound output at a reasonable level of distortion, satisfactory. Tonal quality, very good. Ease of servicing, good. Has appliance outlet, but no "sleep switch" or alarm buzzer (see text). Color and design of clock face was such that it was somewhat difficult to read at certain viewing angles. No UL label.

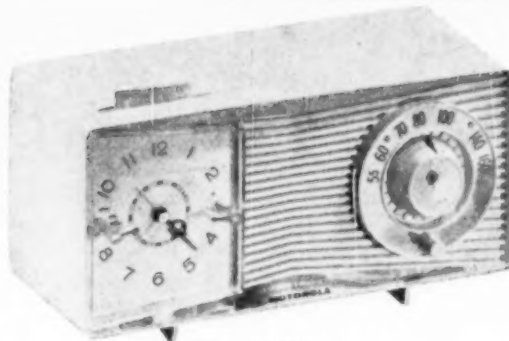
General Electric C407 (General Electric Co.) \$29.95.

An average receiver in most respects, but tone quality was only fair.

Plastic cabinet. 4-in. speaker. Workmanship, good. Ease of tuning, fair. Sensitivity, good; selectivity, fair. Volume of sound output, satisfactory. Tonal quality, fair. Ease of servicing, fair. Has sleep switch and buzzer alarm, but no clock-controlled appliance outlet. Clock could be read easily. Tips of clock hands were luminous, as is desirable for such a set.

Motorola C3G1 (Motorola Inc.) \$29.95.

An average receiver in most respects.



Motorola C3G1

Plastic cabinet. 4-in. speaker. Workmanship, good. Ease of tuning, fair. Volume of sound output, satisfactory. Tonal quality, fair. Ease of servicing, fair. Had sleep switch, and buzzer alarm which had provisions for repeating of the alarm at 8-min. intervals. Clock face could be read easily.

C. Not Recommended

Zenith B516W (Zenith Radio Corp.) \$49.95.

A good radio, except for leakage current, which was excessive.

Plastic cabinet. 4-in. speaker. Workmanship, good. Ease of tuning, very good. Sensitivity, good; selectivity, very good. Volume of sound output, satisfactory. Tonal quality, very good. Ease of servicing, poor. Had sleep switch, buzzer alarm, and appliance outlet. Clock face was somewhat hard to read at certain viewing angles. Excessive shock hazard present (leakage current, 5 ma.).

Emendations to Consumer Bulletin

Toys for Christmas
Page 14, Nov. '59 Bulletin

The price of the *Jensen Steam Engine No. 25* was incorrectly noted as \$29.95. The correct price is \$26.

Electric blankets
Page 21, Dec. '59 Bulletin

We have been informed by Bobrich Products Corp. that they no longer manufacture the *St. Marys* electric blankets, and have not made any blankets under that name since 1957. However, since CR's test blanket was purchased in a city department store in late summer of 1959, it is obvious that the *St. Marys* blanket may be available at many retail sources. The listing and rating of the *St. Marys* remain unchanged.

Encyclopedias for the children
Pages 17-18, Dec. '59 Bulletin

In the listing of the World Book Encyclopedia, the set is described as for "junior high into junior college." This set should have been suggested for upper elementary grades, junior high, and high school. The new edition of World Book will be in 20 volumes, priced at \$139 to \$179.

1959-60 Consumer Bulletin Annual

Anti-freeze
Page 35, Col. 2

Change rating of the following methanol anti-freezes from A. *Recommended* to C. *Not Recommended*: *Ace*, *Coast to Coast Standard*, *Shell Super*, and *Trek*. (Reserve alkalinities of these brands were too low.)

Softening the water we use

It is startling to note that over 260 billion gallons of water are used daily in the United States for home and industrial purposes. The average consumption per person for eating, drinking, bathing, laundry, etc., is about 50 gallons a day. While municipal and private suppliers of water deliver it as a rule, purified and clarified, ready for use, many water supplies do present certain annoying problems—particularly when the water contains too much of minerals and other dissolved and suspended matter. The most common and troublesome difficulties with household water supplies are those presented by hard water.

What is hard water?

Pure water is a compound of two gaseous elements, hydrogen and oxygen. However, what we use for drinking, cooking, bathing, and washing is not pure water but water containing dissolved gases and minerals and other materials. Rain as it falls is never pure, for it picks up gases and dust on its way to the earth. Then, as it runs along the surface of the ground and seeps into the soil, it dissolves many minerals in varying amounts, especially calcium (lime) and magnesium salts. It is these two minerals that are chiefly responsible for producing hard water. Both calcium and magnesium combine with soap and to a lesser degree with synthetic detergents in a way that makes the dirt-removing or detergent action less effective.

The degree of hardness in water is expressed in either of two ways, as parts per million or grains per gallon of calcium carbonate or its equivalent. One grain, 1/7000 of a pound, per gallon is equal

to 17.1 parts per million. Any water containing even as little as 3 to 4 grains of calcium carbonate per gallon (51 to 68 parts per million) has noticeable effects from the hardness standpoint.

Water supplies across the country vary in the amounts of calcium and magnesium compounds they contain and can be classified as follows:

Classification	Grains per U.S. gallon	Parts per million
Zero soft water	0	0
Moderately soft	0 to 3	0 to 51
Moderately hard	3 to 7	51 to 120
Hard	7 to 20	120 to 340
Very hard	20 plus	340 plus

What are the practical difficulties with hard water?

Hard water affects us in a number of ways in the home. With all detergents (especially soap), calcium and magnesium produce curds or complex compounds, and more of the detergent must be added for effective washing. In the laundry, such a condition not only wastes soap or synthetic detergent but causes fabrics to become hard and scratchy and to wear out sooner. Colors become dull looking, whites turn yellow, and fabrics are more easily scorched when the curds are present. They cannot be rinsed out easily. In the kitchen, hard water produces dull, streaky films on glasses and china, and causes scale deposits to accumulate in pots and pans (especially noticeable in the teakettle), which causes a waste of electricity or gas in heating the water and calls for a longer time in cooking foods. "Rings" in the bathtub and

Water Hardness Map of the United States

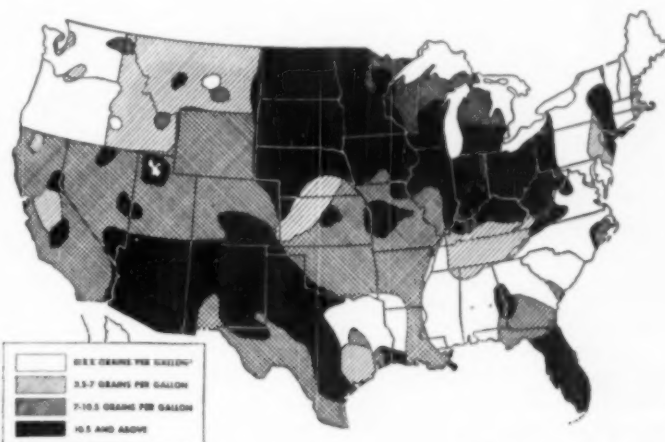
This map shows general water hardness areas in the United States. However, due to the nature of the sub-soil structure, water hardness may vary to a significant extent from one source to another within a general area.

Grains of hardness are expressed as calcium carbonate.

Darker areas indicate harder water.

White or lighter areas indicate softer water.

1 grain per gallon is equal to 17.1 parts per million.



Courtesy Dow Chemical Company



Courtesy Water Conditioning Foundation

Shampooing a woman's hair with hard water presents problems, as illustrated by the appearance of the hair on the left. With softened water results are much better, as seen on the right.

lavatory are familiar phenomena to everyone who must use hard water. Hard water also interferes with personal grooming in bathing and in the washing of hair. It often lowers the efficiency of water heaters, and it plugs up piping and other plumbing. All in all, hard water can be troublesome, inconvenient, and expensive—and the disadvantages become worse as the hardness of the water increases.

Other water problems

Other mineral impurities besides calcium and magnesium can also present problems. Some of these are: unpleasant odors, caused by hydrogen sulfide; red water, caused by iron or sometimes manganese dissolved in the water; and turbidity, caused by silt or sediment or living organisms suspended in the water. Some impurities are so objectionable that they cause an unpleasant taste or odor when present in the extremely small proportion of 1 part per billion, sometimes even less. Water that contains large amounts of carbon dioxide will cause excessive corrosion of piping and other plumbing equipment. Such waters are among those called aggressive, because of their strong action on metals in the plumbing system. Many of these conditions and most combinations of them can be corrected to a degree with appropriate water-conditioning equipment.

How can we remove "undesirable ingredients"?

In some localities a filter may do what is needed; in others, softening equipment may be needed. Besides removing sediment or dirt, filters can be used effectively for removal of iron, bad taste, and odor. Also available are "neutralizing filters" to treat corrosive water by counteracting its acidity. Filters alone do not, however, soften water and they can never assure that water which carries disease organisms or bacteria will be purified and safe to drink and to use in cooking. This is an

important point because there are some salesmen so uninformed or so unscrupulous as to claim that "filters" which they sell will make safe drinking water out of badly-infected and impure water.

The removal of calcium and magnesium from water is known as softening. In home equipment, the process used for softening water is the ion exchange system (chemical interchange) which in this instance simply means that calcium and magnesium ions are traded for sodium ions. For example:

<i>If hard water contains</i>	<i>Then the softened water will contain</i>
calcium bicarbonate	sodium bicarbonate
calcium sulfate	sodium sulfate
calcium chloride	sodium chloride
magnesium bicarbonate	sodium bicarbonate
magnesium sulfate	sodium sulfate
magnesium chloride	sodium chloride

The above changes in composition are accomplished by running the hard water, before it reaches the water heater and hot or cold water faucets, through a tank containing a bed of insoluble ion-exchange material, such as certain synthetic resins, siliceous gel zeolites, or so-called natural green sands. After hard water containing a certain total number of grains of hardness has passed through the bed of material, its sodium supply becomes exhausted, and the softener will no longer work effectively. At this point the ion-exchange material must be "regenerated." This is done by flushing the system with a solution of salt (sodium chloride in the form of rock salt or pellets dissolved in water). In this process, sodium ions are removed from the brine and go into the ion-exchange material replacing the calcium and magnesium compounds, which are washed and rinsed away. After regeneration, the equipment is ready again to remove calcium and magnesium from more water and so soften it. The ion-exchange materials have a long life and may be used over and over again for many years.

Types of softening equipment

There are basically four types of softening equipment sold for home use, known in the trade as *fully automatic*, *automatic*, *semiautomatic*, and *manual*. These terms relate principally to the procedures for regenerating the resin materials and are characterized as follows:

Fully automatic. Complete regeneration is initiated and performed automatically as preset on a clock or timer. A salt storage chamber, filled several times a year with about 200 to 500 pounds of salt each time, provides for multiple regenerations.

Automatic. All regeneration operations are performed automatically, but the sequence of opera-

tions must be started manually each time it is needed by the setting of a timer or closing of an electric switch. A supply of salt (or brine) is added as required.

Semiautomatic. Necessary operations are performed manually, except the process of rinsing and returning the unit to service, which is automatic.

Manual. All operations are performed manually.

Capacity of water softening equipment

How often any unit will need to be regenerated will depend upon the capacity of the equipment (that is, the number of grains of hardness it is capable of removing), the degree of hardness of the water, and the number of gallons of water treated. For example, a unit with a capacity of 50,000 grains will soften about 5000 gallons of water having a hardness of 10 grains per gallon ($5000 \times 10 = 50,000$). With water of 10 grains-per-gallon hardness for a family of 5, with each person using an average of 50 gallons of softened water daily, a softener with a capacity of 50,000 grains would have to be regenerated about every 20 days. From the standpoint of convenience and economy it is best to choose a size from among the manual and semiautomatic equipment such that regeneration will be needed not oftener than once every two weeks. Fully-automatic equipment should be of such size as not to require regeneration more than once in any 24-hour period.

Water softening equipment will also remove iron from the water, but as little as 2 parts per million of iron in the water being softened is likely to reduce noticeably the water-softening capacity of the equipment, particularly if the water is very hard or turbid. Under such conditions, it is advisable to install separate filtering equipment ahead of the softener. Brown stains on plumbing fixtures and laundered items can be produced with as little as 0.3 parts per million of iron.

How to measure water hardness

Almost all water supplies are hard to some degree. As mentioned previously, the degree of hardness depends on the amount of the invisible compounds of calcium and magnesium in the water. Anyone can determine for himself very simply and inexpensively how hard his water supply is. One method uses "tincture of green soap" (available at drug stores and known in the Pharmacopoeia of the United States as "soft soap liniment").

Hard water test kits are available on the market and from dealers selling water softening equipment or supplies, at reasonable prices. One such test kit, *Calgon Speed-Kit*, is sold by Calgon, Inc., Pittsburgh 30, for \$3.50. This kit, containing sufficient amounts of the chemical solutions for a

great number of tests, is much easier to use than the green soap test, and indicates hardness by a clearly evident color change in about two minutes.

Perhaps the easiest way to find out the hardness of your water is through an inquiry to your water supply company or your municipal water plant. All water softening equipment companies offer free water analysis service. Most will furnish sample bottles, mailing containers, and data sheets. The test can be arranged either through a local dealer or by writing to the company directly.

Advantages and disadvantages

The advantages enjoyed by users of a water softening system, especially in very-hard-water areas, greatly outweigh the disadvantages and the substantial expense involved. However, each homeowner will need to consider the various factors in the problem and arrive at his own decision in the light of his own water supply and the difficulties it presents in his home. With softened water there will be saving of soap and synthetic detergent; clothes will be whiter and cleaner; insoluble curds, bathtub rings, and other evident results of hard water use will be absent. Washing and bathing will be more pleasantly done, and deposits of calcium and magnesium scale will not appear in pots and pans and in the plumbing and toilet bowl.

As mentioned previously, calcium and magnesium when removed from the water are replaced by sodium. The exchange, however, is not on a



To measure hardness of water with tincture of green soap, count the number of drops of the liquid soap that must be added, one drop at a time, to a measured 2 ounces of the water being tested to obtain a clearly evident quantity of stable suds upon vigorous shaking. (Shake the bottle after each drop or two is added, till the suds point is reached.) The number of drops of the liquid soap required to produce the suds corresponds nearly enough for practical purposes to the hardness in grains per gallon.

Manufacturer or distributor	Rental through dealer, dollars	Type of equipment	Range of capacity each regeneration, thousands of grains hardness	Range of intermittent service flow rates, gallons per minute	Range of salt per regeneration, pounds	Price range (f.o.b. factory), dollars
Bruner Corp., 4763 N. 32 St., Milwaukee 9, Wis.	No	Fully auto.	15-80	8-24	7-48	289-777
		Automatic	30-125	7-20	18-65	190-584
		Manual	30-125	7-25	18-65	118-415
Century Softener Corp., 1021 W. Atkinson Ave., Milwaukee 6, Wis.	3.50-6.75 per month, equipment only	Fully auto.	4-40	6-12	5-25	289-629
		Automatic	48-80	9-10	29-48	339-444
		Manual	32-128	7-30	20-80	219-489
Crane Co., Chicago, Ill.		Similar to equipment sold by United Water Products, Inc.				
Culligan, Inc., Northbrook, Ill.	3-9 per month	Fully auto.	4-45	5-10	2-20	280-400
		Semi-auto.	30-55	5-8	22-40	190-325
		Manual	30-55	5-8	22-40	190-325
Duro Co., Dayton 1, Ohio	No	Fully auto.	15-60	4-8	8-30	289-475
		Semi-auto.	30-120	7-12	15-58	168-553
		Manual	30-120	7-12	15-58	142-527
Elgin Softener Corp., 134 N. Grove Ave., Elgin, Ill.	2.50 upper per month, equipment only	Fully auto.	15-70	5-10	6-33	273-468
		Semi-auto.	33-75	5-10	15-38	174-262
Great Lakes, 101 Francis St., Stevens Point, Wis.; 1500 Brandon Rd., Glenview, Ill.	Model 25R	Fully auto.	30	8-10	10	333-399
		Automatic	30-120	8-12	15-60	179-366
		Manual	30-120	8-12	15-60	119-306
Hungerford & Terry, Inc., Clayton, N. J.	No	Fully auto.	40	5-8	16-20	410
		Semi-auto.	40	5-8	16-20	400
		Manual	40	5-8	16-20	249
Kisco Boiler & Engr. Co., 2400 DeKalb St., St. Louis 4, Mo.	No	Fully auto.	8-24	6-9	5-15	249-310
		Automatic	12-24	6-9	5-15	212-251
The Lindsay Co., 1381 Marshall Ave., St. Paul 4, Minn.	2.50-5 per month, equipment only	Fully auto.	8-10	7-22	3-4	300-411
		Semi-auto.	18-64	11-24	10-40	167-365
The F. E. Myers & Bro. Co., 249 Orange St., Ashland, Ohio	No	Fully auto.	20	7	8	483
		Semi-auto.	48-104	7-17	25-50	260-366
		Manual	48-104	7-17	25-50	132-325
Peerless Water Softener Co., 709 Gibson St., Kalamazoo, Mich.	No	Fully auto.	30-60	8-15	15-30	260-495
		Automatic	30-60	8-15	15-30	395-466
		Semi-auto.	30-90	8-15	15-45	172-292
The Permutit Co., 50 W. 44 St., New York 36	5.50 per month for equipment	Fully auto.	10-31	10	8-17	304-346
		Automatic	29-102	10-20	10-30	276-600
		Semi-auto.	29-102	6-10	15-50	198-358

Manufacturer or distributor	Rental through dealer, dollars	Type of equipment	Range of capacity each regeneration, thousands of grains hardness	Range of intermittent service flow rates, gallons per minute	Range of salt per regeneration, pounds	Price range (f.o.b. factory), dollars
Rain Soft Water Conditioning Co., Bensenville, Ill.	No	Fully auto.	12-96	7-14	8-60	300-410
		Automatic	32-96	8-15	20-60	210-290
		Semi-auto.	32-96	8-15	20-60	200-270
		Manual	32-96	8-15	20-60	170-250
Red Jacket Mfg. Co., 1051 S. Rolfe St., Davenport, Iowa	No	Fully auto.	20	8	12	240
		Automatic	35-105	6-11	21-63	177-300
		Manual	32-105	6-11	20-63	125-261
Reynolds Water Conditioning Co., 12100 Cloverdale Ave., Detroit 4, Mich.	3.50 per month, equipment only	Fully auto.	15-130	8-18	8-65	249-751
		Automatic	32-130	13-18	16-65	159-389
		Manual	30-130	13-18	15-65	159-389
Roper-Webb Corp., 9642 E. Rush St., El Monte, Calif.	No	Fully auto.	28-42	5-39	12-18	439-467
		Automatic	28-140	5-39	12-60	378-695
		Semi-auto.	35-140	5-39	15-60	255-468
		Manual	35-140	5-39	15-60	224-424
Sears, Roebuck & Co	No	Fully auto.	10	8	4-7	183-233*
		Semi-auto.	55-95	7-10	28-48	148-208*
		Manual	50-120	7-14	25-60	113-225*
Southern California Engr. Co., 1529 S. Robertson Blvd., Los Angeles 35, Calif.	Yes	Fully auto.†	16-550	20-100	5-165	275-1500
Southern Water Conditioning, Inc., 301 - 15 Ave., South, St. Petersburg 1, Fla.	No	Fully auto.	18-28	6-9	9-14	410-460
		Automatic	27-120	6-20	13-60	450-655
		Semi-auto.	27-120	6-20	13-60	300-560
		Manual	27-150	6-20	13-75	230-620
Stover Water Softener Co., St. Charles, Ill.	No	Fully auto.	13-100	7-20	5-40	250-550
		Automatic	13-26	8-10	5-10	225-260
		Semi-auto.	22-100	7-20	18-54	108-379
		Manual	30-90	7-20	12-54	98-247
United Water Products, Inc., Walworth, Wis.	No	Fully auto.	15	6-8	4	349
		Semi-auto.	30-90	6-16	12-37	177-288
Universal Water Softener Co., 28 N. Bennett St., Geneva, Ill.	No	Fully auto.	15-50	10-15	8-25	240-360
		Semi-auto.	25-100	5-15	13-50	90-265
Western Filter Co., 4545 E. 60 Ave., Denver 16, Colo.	No	Semi-auto.	48-160	6-15	24-80	253-550
		Manual	48-160	6-15	24-80	208-496
The Herbert Wolcott Co., Columbia, Mo.	3 up per month, equipment only	Fully auto.	15-80	8-15	8-38	257-349
		Automatic	30-80	8-15	15-38	159-298

* f.o.b. nearest warehouse.

† Some units do not have means for automatic by-passing of raw water during regeneration.

one-to-one basis, that is, one sodium for one calcium, but on a two sodium for one calcium basis. (The same is true of magnesium.) This means that softened water will contain additional sodium equal to twice the amount of calcium and magnesium removed. Most persons are able to throw off sodium as rapidly as is necessary, but to anyone who has a heart condition or high blood pressure, or is overweight and should be on a salt-free (no sodium-chloride) diet, sodium from any source may be important. Such a person usually has difficulty in eliminating sodium from his system anyway, and tends to put on weight through increased retention of water in his tissues, with even an ordinary amount of sodium in his food and water intake. Any extra sodium can cause his weight to increase, thus putting an extra load on the already overburdened and weakened heart. Besides, the problem of sodium restriction is a serious one for many people to whom doing without salt in their foods is a real deprivation. If such people use softened water containing large amounts of sodium for drinking and cooking, their problem of keeping sodium intake down to a satisfactory figure becomes even more difficult. Where the untreated or natural water of a community is also high in sodium, it may be necessary for persons on a severely sodium-restricted diet to use bottled sodium-free water for drinking and cooking.

For a number of reasons, it will be best for most persons if water for drinking and for cooking is taken from the piping ahead of the softener.

Another disadvantage of completely softened water, and this includes naturally soft water, too, may be a tendency to increase corrosion of piping and water tanks, particularly in hot-water systems. Removing the scale-forming compounds, which afford a degree of protection to the metal from corrosion due to water, may hasten the rusting of steel pipes and tanks (even so-called glass-lined tanks) and in some cases produce active corrosion even of copper piping. To keep corrosion to a reasonable minimum, the water softener should preferably not reduce the hardness content below about 4 or 5 grains per gallon. With this moderate hardness there remains sufficient mineral content to protect the metal, and yet the hardness is not sufficiently great that it will interfere seriously with washing and cleaning.

Water softened by home water softening equipment still contains minerals and is therefore no more desirable than the untreated water for uses which require low mineral content, such as steam irons and automobile batteries. Because of the higher sodium content, it is not advisable to use softened water for watering plants, gardens, or lawns.

What equipment to buy

Any softening equipment must be selected to meet the requirements of the place where it is to be used—no one can provide a recommendation which will apply to conditions in all places and in all homes. It is possible, however, to outline certain steps one should follow before making a final decision.

First decide whether it is to your advantage to buy or rent the equipment for water treatment. Not all dealers offer a rental service, but it might be advisable to look into rental possibilities anyway. Certainly, if you do not own your own home or if you contemplate moving at some time in the foreseeable future, use of a rental service might be definitely advisable. Renting has the advantage that it avoids the necessity of making a considerable investment at one time for the purchase and installation of new equipment. Over an extended period of time, however, it may be more economical to buy the equipment.

Some dealers who will rent equipment at a fixed monthly fee will also replace the tank of exhausted softening material with a fresh one on a monthly, bimonthly, weekly, or biweekly basis, depending on the homeowner's requirements. The fee for this service, as with the other, varies with the location and the dealer, but it generally runs from about \$2.75 to \$3.75 per tank for once-a-month exchange; each additional exchange in that month costs about \$1 to \$1.75 extra.

Before you buy, have your water supply tested to determine better what type of ion-exchange material to use, the size of unit needed, and what treatment beyond softening, if any, may be needed. Also estimate the number of gallons used over a period of time, say two or three weeks, for laundering, bathing, cleaning, etc. To keep initial costs down as well as cost for future maintenance, the water used for sprinkling a lawn or garden and for toilet tanks should be piped directly from the incoming water line before the water has gone through the softener. Water for drinking and for cooking should also be taken from the piping ahead of the softener.

Before selecting specific equipment, check that the capacity of the pump and well and the operating pressure of the water system, if you have a private water supply system with your own pumping unit, are sufficient to assure proper operation and regeneration of the softener. Usually, at least 30 pounds pressure is desirable.

In deciding upon the purchase of a particular water softener, it will be worth while to spend some time in comparing the offerings of the different makers for convenience, service, and price, and the price in each case should be for the com-

(Concluded on page 30)

Another dangerous food additive banned— in one application, at least. The Food and Drug Administration takes a step that is long overdue

OUR January issue noted the barring of the sale of fresh and canned cranberries contaminated by a highly poisonous ingredient capable of causing cancer in test animals when fed in almost infinitesimal quantities (page 20, January BULLETIN). One did not need the gift of prophecy to be sure that this would not be the last such incident. Official steps to halt immediately the sale of chickens ("caponettes") that had been treated with growth-promoting hormones (stilbestrol) followed within a month after the sensational cranberry incident.

The sale has been stopped of this dangerous additive for modifying the physiological and sexual characteristics of poultry, thus causing the birds to fatten quickly. (One big poultry-producing state, North Carolina, more sensitive to the dangers in the use of such material, had already barred by law stilbestrol for treatment of chickens.) The Department of Agriculture, concerned primarily with helping farmers to increase poultry production with maximum economy, and various state agricultural experiment stations, have not concerned themselves with the possibility of public health problems being involved. Their job, as they saw it, had to do with agriculture and economics, not health and hygiene.

Not only did the Department of Agriculture recommend the use of stilbestrol in chickens, but the Federal Food and Drug Administration in 1947 authorized its use, on the ground that government analysts did not find any residues in the meat. Now, however, government experts, a new set of them, perhaps, do find traces of stilbestrol in skin, liver, and kidney tissues of "caponettes." The discussions of officials with industry which brought about the sudden change in policy in mid-December 1959 were evidently not open to the press, and did not have the benefit of participation of consumers, who are expected to buy and eat the product but not to concern themselves about its safety and wholesomeness, except as the government may choose to inform them at its convenience.

Although it is known that stilbestrol (also called diethylstilbestrol) has produced cancer in animals and human beings, feeding of stilbestrol to meat animals, beef, mutton, and lamb, has been carried on for years without protest from anyone other than consumers, a Congressman or two, one or two outstanding government scientists, and a

few medical men. Government officials have held in the past that any residues of diethylstilbestrol left in the animal when its meat was consumed at the table, were only the merest traces, too small to have any harmful effect. The government has nevertheless decided now that substantial contamination exists in cockerels chemically caponized by stilbestrol, and that this contamination may be a danger to health.

It is said that as the law now stands, the Food and Drug Administration can and will turn down *new applications* for permission to use stilbestrol in feeds for meat animals. But it will not interfere with *present users*, who may continue to mix the hormone into feed products, unless and until traces of stilbestrol are found in beef or lamb, as has now occurred in the case of chicken. Secretary Flemming of the Department of Health, Education and Welfare, has indicated that he considers the law inadequate in this respect, and he plans to press for provisions which will permit government agencies to *withdraw*, as of course they should, approvals previously granted for food-related uses of any chemical which is at any time found to produce cancer when fed to animals.

Drug houses manufacturing diethylstilbestrol have agreed to quit selling it for use by poultry raisers, but its use in meats will continue until consumers make it clear to their representatives in Congress that they want *no* potential cancer-starting ingredient in *any* food products.

From Consumer Bulletin, September 1957, pages 19-20

Diethylstilbestrol is a synthetic sex hormone which has been extensively implanted in the necks of poultry to bring about rapid growth and fattening. The results of this biochemical caponizing process are similar to those obtained by surgical castration of the male bird, but the chemical method is simple and cheaper. No one knows about the effects of long-term ingestion of minute quantities of diethylstilbestrol, or the substantial quantities that would be consumed in instances where the pellet had not been fully absorbed in the animal. Sixty percent of chickens examined in one study were found to contain unabsorbed portions of diethylstilbestrol pellets, and in one case 50,000 pounds of chicken so treated were seized and condemned as unsafe for human consumption. (Canada does not permit the hormone treatment of poultry.)

Similar substances are being used to increase the rate of growth of farm animals raised for milk and for slaughter. Incidentally, the cancer-producing tendencies of both natural and synthetic estrogens and their striking

effects on the sexual physiology of animals are well established.

* * *

At the same time that the Food and Drug Administration announced the banning of diethylstilbestrol in poultry, it warned that it would prosecute those in the vegetable oil industry who are now urging in advertising that consumers should favor unsaturated oils and fats, including new types of oleomargarine, as contrasted with meat fat and chemically hardened (hydrogenated) vegetable oils that are asserted to tend to produce deposits of fatty material in arteries, and so render heart attacks more likely. This notice by the Food Administration flies right in the face of well-established, repeated researches favorable to unhydrogenated vegetable oils; its misleading statement will be against the interest of consumers, and at the same time most helpful to those in the oil and fats industries who produce chemically-processed fats of the kind known to competent medical authorities to make a contribution to the development of atherosclerosis, the most common kind of heart disease.

The food industries' stake in the sale of fats of the kinds now predominantly marketed is an

enormous one, and the Food and Drug Administration evidently deems it necessary to protect, by a public pronouncement, the business of those industries. Its action disregards ample evidence that animal fats, including whole milk, cream and butter (see also November 1959 BULLETIN, pages 23 and 24), and likewise hydrogenated vegetable fats (solid shortenings and most margarines) have now been shown to contribute to the development of blood conditions favoring the onset of heart and circulatory disease. Diseases of the heart and circulation now cause half of all deaths in the U.S., and two-thirds of the deaths at age 65 and over, and stand far above all other diseases as causes of death of Americans.

The Food and Drug Administration performed a major service in banning one important food-production use of the synthetic hormone stilbestrol. It is most unfortunate that in another field of at least equal importance to the public health, it has chosen to give no weight to the work of eminently qualified researchers whose studies show that the *type* of oil and fat consumed may play a major part in the development or non-development of high cholesterol levels and accompanying arterial conditions that are a menace to life.

Softening the water we use

(The beginning of this article is on page 23)

plete installation, with all necessary piping accessories and labor. Dependable water softening equipment can be bought from dealers at prices from about \$200 to over \$500.

Fully as important as price is the availability of prompt and dependable service in the future. It will be well worth while to check on this point by inquiry of persons who have bought equipment from the same supplier.

Don't be taken in by "gadgets"

Persons who are looking for water softening or water conditioning equipment are often misled and can be badly taken in by various devices alleged to soften or "condition" or improve water, devices of a kind which are claimed to work without chemicals and to need no regeneration. Regardless of the vigor and attractiveness of the salesman's claims or his apparent willingness to prove them by some trick, device, or demonstration, or to "guarantee" the product, bear in mind that if the device requires no maintenance or no replacement of chemicals it cannot have a useful effect, or soften the water. There is no short-cut

method, equipment, or device which requires only an initial outlay and presents no problems or costs of maintenance thereafter. All such water conditioning equipment is ineffective and useless, no matter how persuasive the claims that may be made.

* * *

The tables on pages 26 and 27 give the ranges of capacities, flow rates, salt requirements for a regeneration, and approximate prices of a number of leading makes of softeners. With these tables the householder can get an idea of the various makes and sizes available and compare their prices. The prospective purchaser will usually need additional information regarding details of finish, pipe and electrical connections, floor space requirements, and other matters. These can be obtained from local dealers or by letters addressed to the manufacturers of types of equipment in which you are interested. Those units listed which provide only the low flow rate of 4 to 5 gallons of water per minute are considered suitable only for small families.

Valiant V-200

(The beginning of this article is on page 39)

Prices

The recommended dealer's retail price of the *Valiant V-200* with standard transmission tested by Consumers' Research was \$2411, itemized as follows:

Manufacturer's suggested list price, \$2130 (the *V-100* is \$77 less); deluxe group, \$29.85; heater and defroster, \$74.40; radio, \$58.50; back-up lights, \$10.70; wheel-trim rings, \$12.10; variable speed windshield wipers, \$5.05; white sidewall tires, \$29.10; anti-freeze, \$3.30; freight, \$58.

Riding and handling qualities

Riding quality at speeds up to 60-65 miles per hour on all types of roads was very good. The *Valiant* is like the larger Chrysler Corporation cars in having torsion bars at the front. Cornering, particularly on winding hilly roads, was also very good, with a minimum of body sway. The car was slightly "nose heavy" on emergency stops. The brakes, which required only light foot pressure, were satisfactory. The parking brake operates on the rear wheels rather than on the drive shaft, as do the brakes in other Chrysler-built cars. (Rear-wheel brakes for parking are much to be preferred.)

Performance on road tests

Acceleration times were:

0 to 60 m.p.h., through all gears	20.2 sec.
20 to 50 m.p.h., third gear	12.9 sec.
40 to 60 m.p.h., third gear	9.7 sec.

These times were considerably shorter than either the *Corvair* or the *Falcon*, which required 24 and 26.5 seconds, respectively, for 0 to 60 miles per hour, 14 and 16 seconds for 20 to 50 miles per hour, and 16.5 and 17.0 seconds for 40 to 60 miles per hour, respectively.

Gasoline mileage under test conditions

The *Valiant* at a constant speed of 50 miles per

hour gave 27.3 miles per gallon, or around 10 percent less than the *Corvair* and *Falcon*. This, of course, is to be expected in view of the greater weight and more powerful engine. In average town driving the *Valiant* gave about 23 miles per gallon.

Speedometer and odometer errors

The speedometer was 8 percent fast at 50 miles per hour and the odometer about 5 percent fast.

Conclusions

The *Valiant* is judged to be a well-built car, well engineered, of good design, and not skimmed in interior dimensions. Many would consider it to be the ideal car for those who are tired of the overpowered, oversized, gas-eating models that until recently Detroit thought were the only kind of cars that would enlist the interest of any large number of American consumers. Tentatively, Consumers' Research would select the *Valiant* as first choice of the three compact U.S.-made cars for users who want good acceleration and good riding quality, and who do not demand a maximum of fuel economy. For those who prefer an automatic transmission even on a "compact" car, the *Valiant* with its more powerful engine is unquestionably first choice. (In general, the low-powered engines of the "compact" cars do not perform as well, with an automatic transmission, in acceleration and hill climbing as one might expect; gasoline consumption will be increased also, with an automatic transmission.) At present, and subject to revision as more information becomes available, the *Falcon* would be our second choice, and the *Corvair* third among the "Big Three" "compact" cars.

Note: Specifications for the *Valiant* were given in the December 1959 BULLETIN; because of space limitations they are not repeated in this issue. Minimum road clearance was 5.4 inches.

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● OFF THE EDITOR'S CHEST

Will sex and violence in motion pictures really pay off?

THERE IS mounting dissatisfaction among consumers with the entertainment offered them, both on television and in the motion picture theater. The recent hue and cry over the rigging of TV quiz shows, and "payola" for the plugging of rock-and-roll records, has somewhat obscured the fact that public criticism of vulgar and lurid portrayal of sex, the detailed presentation of techniques of violence, and the general low moral tone of motion pictures and a few TV programs has been steadily increasing.

At one time there was a fairly effective self-policing Production Code Administration that imposed certain restrictions of good taste and decency on the output of the motion picture industry. In the last few years, however, following decisions of the United States Supreme Court and the elimination of certain state censorship bodies, there has been extensive "liberalization" of the Code to permit the presentation of more "adult" themes, as they are called. Adultery, drug addiction, rape, brutal violence, lewdness, obscenity, are all frankly portrayed on the screen, wide angle, and in color, without anything more than a failure "to receive approval" of the Production Code Administration. Extensively circulated publicity on appeals from such rulings has undoubtedly been quite profitable in bringing customers to theater box offices of the particular films involved.

On another front, Representative H. Allen Smith of California has denounced all films that portray immorality and wrong-doing as typical of the United States and that leave the impression that immorality, gangsterism, juvenile delinquency, and disrespect for law are the American way of life, when actually they are not. Representative Smith introduced in Congress last year a resolution calling on the motion picture industry to take action to prevent the shipment to foreign countries of such pictures because they are harmful to good international relations. The producers of one picture that portrayed an American in an unfavorable light even sought the cooperation of the State Department in making a special request to the government of the country where the picture was to be filmed that they be given the courtesies normally accorded American businessmen. Senator William J. Fulbright, in urging the refusal of this request, reported that the theme of the picture was, in the words of one of the producers, that of a "lush shackled up with an Eurasian dame to whom he spills American secrets." It is obviously not a theme suitable for

Saturday matinees so widely attended by children, or for showing in foreign countries.

Since the motion picture producers are so intent on producing films suitable only for mature audiences, it may well be asked whether or not these pictures should not carry a classification to identify them as such, in all appropriate cases. Consumers' Research has rated motion pictures as suitable for adults, young people, and children since October 1941, and several other publications use similar categories. The National Legion of Decency has for many years classified current motion pictures as suitable for family viewing, for adults only, as unsuitable in part for all, as condemned for all. It has recently added a classification for adults and young people.

The Legion's published ratings are primarily for Catholics, but last fall one important Protestant group joined in the rising protest against overemphasis on sex and violence in motion pictures. One of the criticisms was that sex and violence were being tossed into movies, not so much for the workings of the plot or development of character, but solely to build up box-office appeal. Tightening up of the self-policing action of the Motion Picture Code was recommended.

Whether the industry will heed the signs of discontent or be faced with some more drastic form of censorship is not clear at the present time. Although enlightened critics disavow any desire for rigid censorship, the general public is not so broad-minded. In a poll taken by a prominent Minneapolis newspaper, some 59 percent of those queried favored censorship of TV programs, particularly those dealing with crime and horror and those that were suggestive or sexy. No doubt the same attitude would be applicable to motion pictures shown in theaters as well as on the TV screen.

In Pennsylvania, there is a new censorship law that undertakes to penalize the showing of films that are "obscene," that "incite to crime," and that are "unsuitable for children," where children are admitted to the performance. This law is currently giving the motion picture industry something of a legal headache. The last thing in the world the industry wants to contend with is a rigid system of classification of certain pictures as suitable for "adults only," with the attendant problem of refusing to sell tickets to children for admission to such shows.

In another state, one school board asked local theaters to refuse to book the picture "Teacher

Was a Sexpot," on the ground that it would be "highly detrimental to the morals of our children." The school superintendent took the position that "the title alone maligns an honored profession." The local newspaper criticized the attempt to block the showing of the picture as unwarranted censorship and suggested that responsible theaters advertise such films as "For Adults Only," or "Not for Children," and allow parents to make the final decision on whether their children should see them.

The motion picture industry may feel that it has accomplished some great triumphs in producing grim, unpleasant, violent, and so-called "prestige" pictures or art theater films that the critics applaud but the home folks find objectionable, but the simple economic fact is that motion picture magnates are missing the financial boat in not catering to family audiences. The natural market is the family unit. Baby sitters are hard to find and their services too expensive to permit Mom and Dad to go alone to the movies very often. It is much simpler to load the kids into the station wagon and drive over to a good family show, but who would take an eight-, ten-, fourteen-, or sixteen-year-old to "Anatomy for Murder," "Five Gates to Hell," "On the Beach," or "Suddenly, Last Summer," if he knew what they

were about? As one British critic pointed out, in theater circles it is considered almost indecent these days to take the view that people should go to the theater to enjoy themselves. Another characterizes the current output as: "gloom, doom, and sex" stuff.

It is just possible that more decent, clean, fun pictures would bring business back to the neighborhood movie house that is supposed to make a living on its popcorn and refreshment sales at the present time. The observing editor of The Motion Picture Herald, Martin Quigley, Jr., advised the industry last fall to face the fact that there is a "rising tide of agitation for restrictive legislation" and that it was "useless merely to fume over the evils of political censorship." What the industry really needed, in his opinion, was an effective, forceful Production Code that would require and uphold "right and reasonable standards of moral and social acceptability for the mass medium of motion pictures." He warned that if such a code were not put into effect shortly, motion pictures would become "a decayed institution."

It will be interesting to see whether during the current year the motion picture industry heeds such wise counsel or chooses to commit suicide.

Recent reprints from Consumer Bulletin

Title	Bulletin issue	No. of pages	Price (stamps acceptable)*
Milk, a highly overrated food, actually harmful to many	Nov. '59	6	20c
Milk, glorified by government and commercial agencies as indispensable at all ages, actually is a food with serious disadvantages to many, can be really harmful to some.			
Hold that salt!	Sept. '59	4	10c
Most people consume too much salt; overuse of it may do real harm—may contribute to ill health in several ways.			
Contact lenses, by Purman Dorman, M.D.	July '59	3	10c
A medical authority, who has had long experience with contact lenses, discusses the tiny invisible lenses that are placed over the front of the eyeball.			
"Miracle" additives for your car's crankcase?	July '59	3	15c
What's in crankcase oil additives? Trick demonstrations and laboratory "approvals" devised to fool the purchaser.			
The parking meter problem	July '59	4	10c
Tests indicate that most types of parking meters now in use are unreliable devices and frequently short-time their customers.			
Automatic washing machines	May '59	7	25c
Discussion of features, and ratings of 14 models.			
Fact and fancy in mail-order ads	Feb. '59	3	10c
Misleading and tricky advertising by mail-order companies.			
Gadgets and "specialties" for autos	Jan. '59	4	10c
Cleverly misrepresented, or worthless, in nearly all cases.			
Ice skates	Dec. '58	4	15c
Nine well-known brands are rated.			

Title	Bulletin issue	No. of pages	Price (stamps acceptable)*
Taking a trip by air	Dec. '58	4	15c
Classes of accommodations, types of aircraft, how to select an airline to travel by, and important tips for air travelers.			
Fire warning systems	Oct. '58	5	15c
Information that will help the consumer select alarm equipment for his home.			
The truth about nylon and rayon tires	Sept. '58	4	10c
Nylon cord tires are higher priced than rayon—are they better and stronger?			
Electronic organs for churches	Aug. '58	5 (mimeo)	10c
Copying devices for use in the office, school, and home	Mar. '58	5	15c
Those labels on packaged foods	Feb. '58	3 (mimeo)	10c
Manufacturers find ways to make them hard to read.			
Notes on foods and nutrition	'57-'58 Annual	7	20c
A discussion of important basic principles for good and safe eating that will help one to prevent indigestion, to use the right types of edible fats, to avoid foods of the kinds that are suspected to be contributory to causation of cancer and heart disease.			
Heart disease	Dec. '57	5	10c
Something has happened lately to the American diet that has made heart disease by far the major cause of death, especially among men, even young men.			
Fat in the diet	July '57	4	10c
Its amount and especially the kinds of fat consumed by most all Americans contribute greatly to the exceedingly high rate of deaths from diseases of the heart and circulation in the U.S.			
The food you eat	Sept. '57	5	10c
More and more physicians and scientists suspect that complex chemical substances (including food dyes) added to our food supply, may be an important cause of the present high rate of deaths from cancer.			

* Reprints in quantities of 100 or more can often be supplied at a lower price. (Several physicians and dentists have bought 1000 or more copies

of certain reprints, including "Milk, a highly overrated food" and "Hold that salt!")

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: Stereo records are indicated by the symbol Ⓢ. Ratings (AA, A, B, etc.) apply first to the quality of interpretation, second to the fidelity of the recording.

Ⓢ **Beethoven:** *Symphony No. 4* and *Coriolan Overture*. L'Orchestre de la Suisse Romande under Ansermet. London CS 6070. \$4.98. An exuberant symphony that Ansermet brings off stylishly, robustly. The engineers have picked it up well. AA AA

Ⓢ **Beethoven:** *String Quartets*, Op. 18, Nos. 1-6. Budapest Quartet. 6 sides, Columbia M3S 606. \$17.94. Nobody plays the German composers better than the Budapest. and it is doubtful whether anybody plays them so well. But certain romantic tendencies that characterize these performances were less pronounced in this group's playing some years ago. The compositions are often called the "early" quartets, yet they are masterpieces, nevertheless. Clear and lifelike recording. AA AA

Ⓢ **Brahms:** *Haydn Variations & Wagner: Siegfried Idyll and Traume*. Philharmonia Orchestra under Kletzki. Angel 35765. \$5.98. Though the short *Traume* is seldom heard with a violin soloist, the other numbers are standards in the repertoire—and they are excellent. Kletzki knows them thoroughly, and his instrumentalists are technically equal to the task. Rich recording. AA AA

Ⓢ **Donizetti:** *Lucia di Lammermoor*. Callas, Tagliavini, etc., under Serafin. 4 sides, Angel 3601. \$12.96. The romantic opera of Donizetti that has best stood the test of time. Callas in the name role sings with uncommon expression, with trills as broad as the Grand Canyon, and a few wobbly high notes. But her performance on the whole is something to marvel at. Tagliavini is enjoyable nearly all of the time, but he shouts too often. Cappucilli tops his competitors on other disks and the other members of the cast are quite satisfactory, with the chorus better than that. Serafin conducts with admirable flexibility and understanding. Spacious recording, pleasing. Not a perfect disk, but likely the best offered today. A AA

Ⓢ **Handel:** *Messiah*. Vyvyan, Sinclair, Vickers, Tozzi (singers), Royal Philharmonic Orchestra and Chorus under Beecham. 8 sides, RCA Victor LDS 6409. \$23.92. The soloists are more than adequate in this great oratorio, but not perfect. Jennifer Vyvyan does particularly well with "He Shall Feed His Flock" and "How Beautiful Are the Feet." Giorgio Tozzi scores with "But Who May Abide" and "Why Do the Nations." The chorus does its job skillfully, with only a few tentative passages. Beecham conducts with obvious relish for the task. The work uses seven sides. On the eighth side appears sections that were deleted from the complete score. But isn't there some tampering with the orchestral score? Rich, wide, and deep recording which in the case of the choruses shows off stereo to its best advantage. Attractive, practical packaging. . . . The truncated 4-side Columbia M2S-607 offers capable soloists, but less than good chorus and direction. Well recorded. A AA

Ⓢ **Haydn:** *Symphony No. 44* and *No. 57*. Netherlands Chamber Orchestra under Goldberg. Epic BC 1046. \$5.98. Szymon Goldberg is a concert violinist who has found a new niche as a conductor. His readings of these rarely-heard symphonies stand in good taste; they are skillful, warm. Very well recorded. AA AA

Ⓢ **Strauss:** *Emperor Waltz, Blue Danube, Tales from the Vienna Woods, Voices of Spring, Vienna Blood*. Orchester der Staatoper under Eduard Strauss. Vox STVX 426030. \$5.98. The best of Johann's waltzes conducted by a descendant. Much of the lilt is present, but others have turned in more sensitive, stimulating performances. Well recorded. A AA

Ⓢ **Strauss:** *Also Sprach Zarathustra*. Vienna Philharmonic under von Karajan. London CS 6129. \$4.98. I like the sweep of this performance of Richard Strauss' symphonic poem. Von Karajan makes the music move and he conveys feeling for details that is astonishing. The recording of the opening measures, which in the past have

often been used for testing studio equipment because of the tremendous crescendo, didn't bowl me over. After that, however, the sound was warm and pleasing. AA AA

Strauss: *Parergon to the Sinfonia Domestica*. Paul Wittgenstein (piano) with the Boston Records Orchestra under Simon and *Transcriptions for Piano Left Hand*. Boston Records B 412. \$4.98. The more exciting side offers left-hand piano solo transcriptions of "Lucia," "Du Bist Die Ruh," and others. It is here the art of Mr. Wittgenstein is best revealed. The Richard Strauss piece seems endless, though it is well played. Good recording with orchestra, superb in solo piano. AA A

Villa-Lobos: *Forest of the Amazon*. Symphony of the Air and Chorus and Bidu Sayão (soprano) under the Composer. United Artists UAL 7007. \$4.98. Described as Villa-Lobos' latest creation, it may have been his last. He died in Nov. 1959. It's a 47-minute suite based on Hudson's novel, "Green Mansions." It has atmosphere, strange harmonies, "Amazon" effects. Definitive performance. Good recording for mono. AA A

Ⓢ **Wagner:** *Das Rheingold*. Flagstad, London, Svanholm, etc., under Solti. 6 sides, London OSA 1309. \$17.94. The "Prologue to the Ring" is the least enchanting part of the tetralogy. Here it is recorded complete for the first time. . . and what a recording! A sincere attempt was made to capture motion of the singers on stage, and the illusion is arresting, to say the least. Sound effects such as anvil hammering and stake driving are most realistic. The quality of sound, the balance of singers and orchestra indicate that nothing was spared to make this the best reproduction engineers can offer today. As for the performance: great are Flagstad as Fricka and Neidlinger as Alberich. Svanholm's performance as Loge qualifies as a tremendous piece of character singing, and Kuen's performance of Mime is equally good. If London as Wotan and Madeira as Erda fall short of the great singers of our era, it is not by much and the whole performance need not be rated less than highly recommended. AA AA

Ⓢ **Eileen Farrell Sings Arias in the Great Tradition** (soprano). Columbia MS 6086. \$5.98. Arias by Beethoven, Weber, Cherubini, Gluck, that tax the giants of the art. Miss Farrell passes with flying colors, exhibiting just a little caution in the florid parts such as she encounters in the second section of "Leise" from *Der Freischütz*. Excellent musicianship, top-notch recording. AA AA

Home Sweden Home. Various Singers and Instrumentalists. London TW 91197. \$3.98. Traditional folksongs and country dances, favorites in Sweden. A flavorsome disk. Its emotion gets across even though you don't understand the language. Well performed and satisfactorily recorded. AA A

Ⓢ **Pop Overs**. Eastman-Rochester Pops Orchestra under Fennell. Mercury SR 90222. \$5.95. Fennell is an old hand in the pop field. Here are 10 of the all time favorites: "Liebestraum," "Hora Staccato," "Finlandia," "Clair de Lune," etc. The stereo recording benefits by turning down the treble of channel A. AA A

Ⓢ **Suppé Overtures**. Hallé Orchestra under Barbirolli. Mercury SR 90160. \$5.95. "Poet and Peasant," "Zautiful Galatea," "Light Cavalry," and three others heard at pop concerts. Masculine, well phrased performances, a joy to hear. Rich recording. AA AA

Ⓢ **The Art of Milstein** (violin). 4 sides, Capitol SPBR 8502. \$11.98. Few will question that Milstein ranks among the top violinists in the world today, a skillful instrumentalist and a distinguished musician. He is close to his best in this set which features the Tchaikovsky *Violin Concerto*, beautifully played, and includes Beethoven's *Spring Sonata* (lackadaisically played with Firkusny), and a group of short numbers. The recording is quite satisfactory throughout. A AA

Ratings of Current Motion Pictures

THIS SECTION aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 18 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Boxoffice, Cue, Daily News (N. Y.), The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, The Tablet, Time, Variety (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Ansco, Eastman, Technicolor, Trucolor, Warner Color, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C			A	B	C		
—	2	1	All Mine to Give.....	dr-c A	—	1	7	Counterplot.....	mys-mel AY
—	3	6	Alligator People, The.....	sci-mel A	—	4	3	Cousins, The (French).....	dr A
—	3	1	Amazing Transparent Man, The.....	sci-dr AY	—	4	5	Crimson Kimono, The.....	mys-mel A
—	3	—	American in Salzburg, An (German).....	war-com-c AY	—	1	2	Crooked Sky, The (British).....	mys-mel AY
1	6	2	Anatomy of Love, The (Italian).....	com AY	—	1	3	Cry Tough.....	soc-mel A
—	2	1	Angry Red Planet, The.....	sci-c A	—	4	5	Curse of the Undead.....	sci-mel A
—	4	3	Aren't We Wonderful (German).....	dr AY	—	1	2	Date With Death, A.....	mys-mel A
—	2	1	Atomic Submarine.....	war-dr AY	—	2	6	Day of the Outlaw.....	mel A
—	1	2	Attack of the Jungle Women.....	doc-dr-c A	—	1	4	Defend My Love (Italian).....	dr A
—	2	1	Babette Goes to War (French).....	com AY	—	4	—	Desert Desperadoes (Italian).....	mel A
—	6	3	Back to the Wall (French).....	cri-mel A	—	11	6	Devil's Disciple, The.....	com AY
—	3	5	Bat, The.....	mys-mel A	—	—	4	Diary of a High School Bride, A.....	soc-dr A
—	7	2	Battle of the Coral Sea, The.....	war-dr AY	—	6	—	Dog of Flanders, A.....	com-c AY
—	—	3	Beast from a Haunted Cave.....	cri-mel A	—	6	3	Edge of Eternity.....	mel-c AY
—	2	2	Beasts of Marseilles, The (British).....	war-mys-mel AY	—	5	3	Elephant Gun (British).....	mel-c AY
—	—	3	Behemoth, Sea Monster (British).....	sci AY	—	—	3	End of the Line, The.....	mys-mel A
—	4	3	Behind the Great Wall.....	trav-c AY	—	2	2	Eternal Waltz, The (German).....	mus-dr-c AY
1	5	6	Beloved Infidel.....	biog-c A	—	5	5	Face of Fire.....	mel AY
6	4	1	Ben-Hur.....	hist-dr-c AY	—	6	10	FBI Story, The.....	dr-c AY
1	6	10	Best of Everything, The.....	dr-c A	—	4	10	Five Gates to Hell.....	war-mel A
2	10	4	Big Circus, The.....	mel-c AY	—	3	1	Flying Fontaines, The.....	mel-c AY
5	7	6	Big Fisherman, The.....	hist-dr-c AY	—	9	7	For the First Time.....	mus-dr-c AY
—	6	5	Big Operator, The.....	cri-mel A	—	6	2	4D Man.....	sci-mel-c AY
—	1	3	Black Orpheus (French).....	dr-c A	—	2	3	Four Fast Guns.....	cri-mel A
—	—	4	Blood and Steel.....	war-dr AY	—	6	1	400 Blows, The (French).....	soc-dr A
—	3	—	Bloody Brood, The (Canadian).....	cri-mel A	—	3	—	Gazebo, The.....	com A
—	11	8	Blue Angel, The.....	mel-c A	—	3	1	Gene Krupa Story, The.....	mus-biog A
—	3	—	Boy Who Owned a Melephant.....	com-c AY	—	1	3	Ghost of Dragstrip Hollow.....	mel AY
—	2	2	Bridal Path, The (British).....	com-c A	—	2	2	Giant Gila Monster, The.....	sci-mel AY
—	2	3	Brink of Life (Swedish).....	dr A	—	1	2	Giant Leeches, The.....	sci-mel AY
—	4	4	Bucket of Blood, A.....	mel A	—	2	7	Girls' Town.....	soc-mel A
2	10	4	But Not for Me.....	com A	—	4	1	Glass Tower, The (German).....	mel A
—	1	2	Carmen Comes Home (Japanese).....	com A	—	1	4	Golden Fish, The (French).....	com-c AY
3	5	7	Career.....	mel A	—	1	4	Goliath and the Barbarians (Italian).....	dr-c A
—	2	1	Carlton-Browne of the F. O. (British).....	com AY	—	2	5	Grisbi (French).....	dr A
—	3	—	Can-Can.....	mus-com-c A	—	—	3	Gunfighters of Abilene.....	wes AY
—	8	2	Carry On, Sergeant (British).....	war-com AY	—	2	3	Handful of Grain, A (India).....	dr-c A
—	3	2	Cash McCall.....	dr-c A	—	3	12	Happy Anniversary.....	com A
—	2	5	Cast a Long Shadow.....	wes AY	—	5	2	Hatikvah (Israeli).....	dr-c AY
—	2	1	Christ in Bronze (Japanese).....	dr AY					
—	1	2	City After Midnight (British).....	mys-mel AY					

A	B	C		
—	5	3	Have Rocket, Will Travel.....	com AYC
—	3	—	Hell, Heaven or Hoboken (British).....	war-dr AY
—	2	1	Hell in Korea (British).....	war-dr AY
—	2	2	Hideous Sun Demon.....	sci-mel A
—	3	3	High School Big Shot.....	cri-mel AY
—	2	4	Holiday Island (Italian).....	dr-c A
—	6	2	Hound-Dog Man, The.....	mus-dr-c AY
—	6	2	House of Intrigue, The (Italian).....	war-mys-c A
—	8	1	House of the Seven Hawks (British).....	mys-mel AY
—	2	3	Human Condition, The (Japanese).....	soc-dr A
—	2	8	Inside the Mafia.....	cri-mel A
—	3	3	Isle of Levant, The.....	doc-c A
—	10	7	It Started with a Kiss.....	war-com-c A
—	3	3	Ivan the Terrible II (U.S.S.R.).....	hist-dr-c AY
—	3	—	Jack the Ripper (British).....	cri-mel A
—	8	1	Jayhawkers, The.....	wees-c AY
—	3	—	Jet Over the Atlantic.....	dr AY
1	8	1	Journey to the Center of the Earth.....	sci-c AY
—	3	2	Killer Shrews, The.....	sci-mel AY
—	4	5	Lady Chatterley's Lover (French).....	dr A
5	8	3	Last Angry Man, The.....	dr AYC
—	6	3	Legend of Tom Dooley, The.....	war-dr AY
1	11	1	Libel (British).....	dr AYC
1	9	5	Li'l Abner.....	mus-com-c A
—	4	—	Living North, The (Swedish).....	doc AYC
—	3	—	Lonely Sex, The.....	soc-dr A
—	3	9	Lovers, The (French).....	dr A
2	6	2	Magician, The (Swedish).....	dr A
—	8	3	Man Upstairs, The (British).....	mys-mel AY
—	8	3	Man Who Could Cheat Death, The.....	cri-mel-c A
—	—	3	Man Who Died Twice.....	cri-mel AY
—	2	1	Man Who Wagged His Tail, The.....	fan AY
1	3	—	Masters of the Congo Jungle.....	doc-c AYC
—	6	8	Miracle, The.....	dr-c AY
—	6	4	Miracle of the Hills, The.....	dr AYC
—	2	1	Mischief Makers, The (French).....	dr A
—	—	3	Monster of Piedras Blancas, The.....	sci-mel AY
—	10	5	Mouse that Roared, The (British).....	com-c AY
—	—	3	Mugger, The.....	cri-mel A
—	7	1	Mummy, The (British).....	sci-mel-c AY
—	—	3	Naked Venus, The.....	dr A
—	3	1	Never So Few.....	war-dr-c A
—	2	1	No Place to Land.....	mel A
5	11	1	North by Northwest.....	mys-mel-c A
—	8	7	Odds Against Tomorrow.....	cri-dr A
—	—	3	Okefenokee.....	mys-mel A
4	4	5	On the Beach.....	war-mel A
—	3	1	Once More With Feeling.....	com-c A
1	2	3	1001 Arabian Nights.....	car-c AY
2	9	3	Operation Petticoat.....	war-com-c A
1	7	5	Oregon Trail, The.....	hist-dr-c AYC
—	3	1	Our Man in Havana.....	nov-c A
—	3	2	Paris Hotel (French).....	com-c A
—	2	7	Pier 5, Havana.....	mel AY
3	10	3	Pillow Talk.....	mus-com-c A
—	3	—	Plunderers of Painted Flats.....	wees A
1	8	3	Possessors, The (French).....	nov A
—	3	1	Purple Gang, The.....	cri-dr A

A	B	C		
—	4	1	Rebel Set, The.....	cri-mel A
—	2	1	Reform School Girl.....	soc-mel AY
—	4	6	Return of the Fly.....	sci-mel AY
—	2	2	Rookie, The.....	war-com AY
—	3	5	Room 43 (British).....	soc-dr A
—	2	1	Rosemary (German).....	soc-dr A
—	2	1	Rough and the Smooth, The (British).....	dr A
—	3	2	Sans Famille (French).....	dr-c A
3	10	3	Sapphire (British).....	cri-dr-c A
—	3	—	Scampolo (German).....	dr-c A
—	9	7	Scapegoat, The (British).....	mys-dr AY
—	2	1	Scavengers, The.....	mys-mel A
—	3	—	Scent of Mystery.....	mel A
—	1	3	Sea Fury.....	adv A
—	3	8	Sign of the Gladiator (Italian).....	hist-dr-c A
—	2	1	Sins of Youth (French).....	dr A
—	4	1	Snow Queen, The (U.S.S.R.).....	car-c AYC
—	3	3	Solomon and Sheba.....	hist-dr-c A
2	3	—	South Pacific.....	mus-dr-c AY
—	3	2	Speaking of Murder (French).....	cri-dr A
—	3	1	Stephanie (Germany).....	dr A
—	2	1	Story on Page One, The.....	dr A
—	2	5	Street of Shame (Japanese).....	soc-dr A
—	5	5	Subway in the Sky (British).....	mys-mel A
—	3	5	Suddenly Last Summer.....	dr A
—	7	11	Summer Place, A.....	dr-c A
—	4	2	Surrender—Hell!.....	war-dr A
—	3	4	Tailor's Maid, The (Italian).....	com A
—	4	3	Take a Giant Step.....	soc-dr A
—	3	6	Tamango (French).....	mel-c AY
—	5	3	Tarzan, the Apeman.....	adv-c AY
1	7	4	Tarzan's Greatest Adventure.....	adv-c AY
—	2	2	T-Bird Gang.....	cri-mel AY
—	6	6	Ten Seconds to Hell.....	war-mel A
—	2	1	Terror is a Man.....	sci-mel A
—	7	9	That Kind of Woman.....	dr A
—	2	1	That Naughty Girl (French).....	mel-c A
—	9	9	They Came to Cordura.....	war-mel-c A
3	10	3	Third Man on the Mountain, The.....	dr-c AYC
—	5	6	30.....	mys-dr AYC
—	3	6	Thirty-Foot Bride of Candy Rock, The.....	sci-com AYC
—	4	4	Three Men in a Boat (British).....	com-c A
—	2	1	Tides of Passion (French).....	dr-c A
—	4	—	Tiger Bay (British).....	cri-dr A
—	1	7	Timbuktu.....	adv AYC
—	4	4	Tingler, The.....	sci-mel A
—	3	—	Toccata for Toy Trains.....	mus-doc-c AYC
—	3	1	Touch of Larceny, A (British).....	com A
—	2	1	Tread Softly, Stranger (British).....	mel A
—	2	1	Unforgiven, The.....	mel-c AY
—	1	2	Vice Raid.....	soc-mel A
—	2	6	Warrior and the Slave Girl, The (Italian).....	dr-c AY
—	—	3	Wasp Woman, The.....	cri-mel A
—	6	4	Web of Evidence (British).....	mys-mel A
—	—	3	Wolf Dog.....	mel AYC
—	1	2	Woman Like Satan, A (French).....	dr A
—	8	4	Wonderful Country, The.....	mel-c A
2	10	3	Wreck of the Mary Deare, The.....	mel-c AYC
—	9	2	Yellowstone Kelly.....	mel-c AY
—	6	2	Yesterday's Enemy (British).....	war-dr A
—	—	5	Young Girls Beware (French).....	soc-mel A
—	1	3	Young Have No Time, The (Danish).....	dr A

The Consumers' Observation Post

(Continued from page 4)

DRIVING WITH AN ELBOW OUT OF THE WINDOW is dangerous. In a study of 50 patients in New Orleans, La., Dr. G. R. Rieth reported injuries that varied from a mild abrasion to a serious crushing resulting in amputation, due to this habit.

* * *

THE USE OF IONIZING RADIATION to increase the shelf-life of groceries has been a topic of some interest in certain fields. Now comes word that the Army is scrapping its full-scale food irradiation program, according to Chemical Week, until further research indicates better results. Laboratory tests showed that the penetrating radiations not only killed bacteria but destroyed vitamins as well. The cost of irradiation plus replacing the vitamin content, concludes the report, make the technique uneconomical. Nothing was said about how unwise the policy seemed to be from the standpoint of the human need for natural, fresh, and wholesome foods.

* * *

HAIR SPRAYS SHOULD BE USED WITH CAUTION AND RESPECT. That is the advice of a British doctor, reporting in The Lancet (British) the case of a patient who had developed a cough and discomfort due to extensive use of a hair spray.

* * *

HOW TO STAY HEALTHY WHILE ON VACATION is a problem in these days of jet travel. In addition to the shots that are taken before traveling to certain far-off places, there are other problems to be considered, reports Changing Times. A sudden change to a high altitude, for example (Mexico City and some cities of South America), may have an adverse effect even on people in good health, and care should be exercised particularly by those with a heart condition. Motion sickness, prevalent in children, can often be prevented by taking such medications as Dramamine and Bonamine (which is available as Bonadettes for children) before departing, and at regular intervals until an equilibrium has been established. Tourist stomach, also known by less elegant names, is a common travel illness attributed to changes in hours of eating, water, foods, and exposure to different strains

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of bacteria. The common technique for warding off travelers' diarrhea is drinking bottled spring water, hot tea, coffee, and avoiding milk, ice cream and ices, salads, leafy vegetables and raw food in general. Complicated, highly spiced sauces often cause trouble. Remedies some physicians recommend are Vioform or Diodoquin daily, rest, and a diet of tea, boiled rice, and applesauce for two or three meals. Be leisurely, don't overdo, don't get sunburned, and don't try to see everything in one day, if you want to stay on your feet.

* * *

INSTALLMENT BUYING is a firmly established American custom. The Wall Street Journal reports that the yearly cost of credit to the nation's 50 million families, including consumer credit purchases and mortgages, is something like 11 billion dollars. The newspaper points out that living "on the cuff" is somewhat expensive and cites the example of a \$4000 car bought with a thousand dollars down, the balance to be paid out in installments over 36 months, which may bring the price up to \$4550 or more by the time the last payment is made. Almost everything can be bought on the time payment plan these days, including an airline ticket to Paris.

* * *

ONE OUT OF EVERY FIVE AMERICANS weighs more than he should. That is, no doubt, why so many people these days at least discuss the need for reducing. It is not necessary, however, to resort to artificial or complicated schedules, advises Dr. Milton Plotz of New York City, who points out that merely eating smaller helpings of the usual foods will generally be effective. He suggests a few modifications: not more than one slice of bread at a meal, at breakfast either cereal or toast—not both; essentially lean meat, green vegetables for dinner, and no gravies whatever. A little folder entitled "The Healthy Way to Weigh Less" is available from the Council on Food and Nutrition of the American Medical Association, 535 N. Dearborn St., Chicago 10, that offers some good general advice on the subject.

* * *

THE USE OF WINE IN COOKING often does much to enhance the flavor of foods to which it is added. According to Clementine Paddleford, well-known food columnist, three or four tablespoonfuls of sherry added at the last minute to a sauce, a stew, or a casserole of spicy savor or sweet flavored meats or seafood, will improve the taste considerably. She reports that sherry is particularly effective in bringing out the flavor of ham and other pork dishes. The use of wine in Continental cookery is traditional, and it is surprising that the American wine industry does not do a little serious and careful research into the effect of their product in American cooking, for good wine might well turn out to be an effective rival to monosodium glutamate.

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Valiant V-200

LAST, but certainly not least, of the Big Three's new "compact" cars to be tested by Consumers' Research is Chrysler's *Valiant*, which due to the steel strike and other factors is in extremely short supply and very difficult to obtain. In fact there were none available even for test until two months after Consumers' Research obtained and tested the *Falcon* and the *Corvair*. Many small dealers have lamented their inability to obtain even one *Valiant* for display, and as this article was being written, many dealers had nothing to show prospective customers but pictures of the new *Valiant*. During October and November, only about 9000 *Valiants* were produced, compared to 29,000 *Corvairs* and 54,000 *Falcons*.

The *Valiant* is longer by three to four inches, heavier by about 300 pounds, and has more rated horsepower (101 against 90 for the *Falcon* and 80 for *Corvair*) than its two American rivals. The *Valiants* with standard equipment are priced about \$20 to \$30 higher than the *Corvairs* and about \$90 above the *Falcons*.

From the front, the *Valiant* looks much like the *Studebaker Lark*, except that the *Valiant* has dual headlights, but from there on the similarity ends. On the sedan the trunk lid is so formed as to give the illusion that a spare tire is mounted on it, Continental style, but actually the spare tire is mounted in a compartment under the floor of the trunk space. Although the design has more surface variation and modeling (making repair of damage more expensive) than that of the *Falcon*, the over-all effect of the car is found by many to be very pleasing to the eye.

The *Valiant* was relatively easy to enter and

leave, but tall persons might have some difficulty entering at the front seat because of the angle of the front doorpost, even though the "dog's leg" design is not used. Leg room and hip room were adequate. Headroom was also adequate, and better adapted to tall persons wearing hats than the *Falcon*. In the gearshift models, due to the location of the shift lever on the floor, only two people could sit on the front seat with comfort. The seats were in general comfortable, but some felt more padding was needed in the front seat (foam-rubber seats in both front and rear are standard equipment).

Instead of the conventional direct-current generator, an alternating-current generator is used, with the advantage of less weight and better efficiency, and, probably, greater reliability. The new generator also delivers some charge to the battery at idling and street-traffic speeds, tending to favor longer battery life and more certain starting in cold weather. An instrument-type ammeter is used to indicate charge and discharge (a desirable regression to the method formerly standard on American cars). Absence of oil pressure, however, is indicated by a light. Instruments on the panel were identified and satisfactorily illuminated for night driving. The heater was operated by push buttons, which were also illuminated. There was slight distortion of the view at the edges of the curved front window, but this was not judged objectionable. The *Valiant*, like the *Falcon*, comes equipped with a 180-degree thermostat requiring the use of ethylene glycol anti-freeze.

(Continued on page 31)

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